

BIRD Technical Guidelines (Release 1.0)

April 2017

Contents

1	Introduction	3
2	BIRD General Instructions	4
3	BIRD input layer	6
3.1	Entity Relationship Model – graphical illustration	6
3.2	Instruments, credit facilities and related entities	13
3.3	Counterparties and related entities	28
3.4	Collateral and guarantees (Protections and related entities)	33
3.5	Credit quality	36
3.6	Prudential information	47
3.7	Other cubes	52
4	Validation rules	53
5	Derivation rules	54
5.1	Derivation of “Enterprise size”	54
5.2	Derivation of Carrying amount	72
5.3	Derivation of “Exposure class” and “Risk weight”	76
6	The enriched input layer	83
7	The output layer	84

1 Introduction

The BIRD technical guidelines provide technical instructions on how to use the content of the BIRD database (BIRD DB).

The BIRD DB describes the data which should be extracted from the banks' internal IT systems ("**input cubes**"), the **transformation rules** to be applied to the data extracted in order to derive reports, and the specific final regulatory figures ("**output cubes**").

The transformation rules are described using (i) "natural language" and (ii) the Validation and Transformation Language (VTL). More detailed information on transformation rules in the BIRD model can be found in the BIRD Handbook.

2 BIRD General Instructions

The BIRD input layer is intended to support credit institutions to generate reports as required by regulatory authorities.

The unit populating the BIRD input layer may be:

- a. A head office, including domestic branches
- b. A foreign branch
- c. A legal entity
- d. A group or part of a group

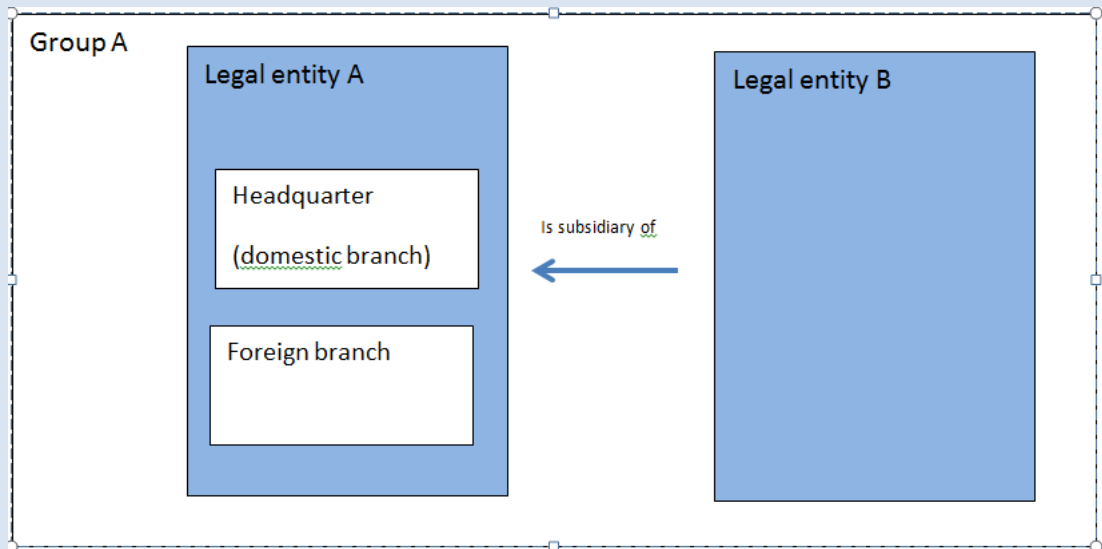
Input data comprise the relationships between the head office and foreign branches, among foreign branches, and the relation among head of the group and its subsidiaries.

The BIRD can manage the report at the level of a branch, legal entity, and group.

The consolidation process is not envisaged to be managed by the BIRD, however the input layer can be fed with information at consolidated level or at individual level, to distinguish the two levels of information the variable perspective is added in the cubes where the distinction is needed.

Example 1: An illustrative example about the points above

Suppose there are two legal entities A and B, where B is subsidiary of A. A is composed by a Head office (the domestic branch) and an EU branch. The entity A and B belong to the group A. The following chart shows the relations between the entities:



The BIRD input layer may refer to:

- The group A
- The legal entity A, in which case it contains information on all the branches. The input layer is built in such a way that it is also possible to generate the reports for the units included in the legal entity.

- The Headquarter alone or any of the foreign branches alone.
- The legal entity B.

The time dimension is for the time being not documented in the BIRD. This means that the information in the *BIRD input layer* is seen as a snapshot at a certain moment.

Due to the fact that (for the time being) the threshold (for AnaCredit) is not covered by the BIRD model, the content of the input layer related to loans should be restricted to the content that needs to be reported for AnaCredit reporting.

3 BIRD input layer

This chapter describes the BIRD input layer. The Entity–Relationship model (ERM) is presented along with instructions concerning the population of each component of the model. For presentational purposes, it is divided in sections, each one showing parts of the model.

The BIRD input layer is constructed in such a way to that reflects how data is organised in banks' internal systems, in order to make the process of populating the input layer as simple as possible.

3.1 Entity Relationship Model – graphical illustration

The BIRD input layer is structured in four main blocks with business-related content, plus one additional block for information guiding the transformation process.

The following chart shows the main blocks of the BIRD input layer and their relationships.

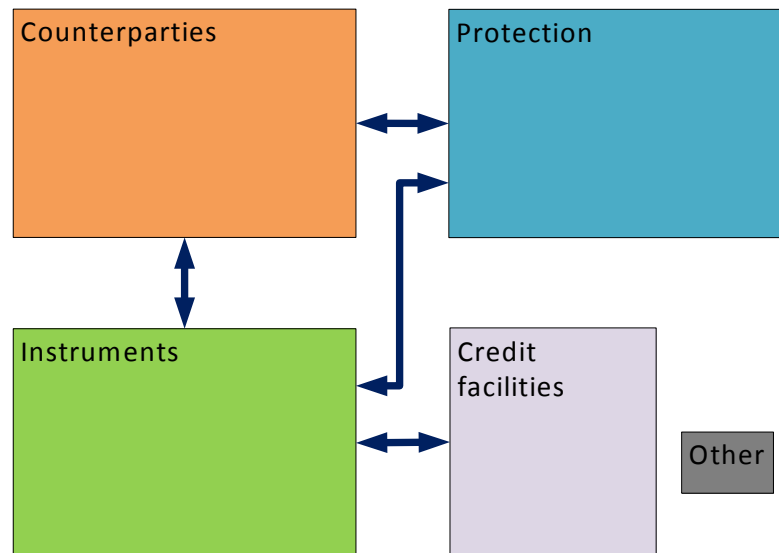
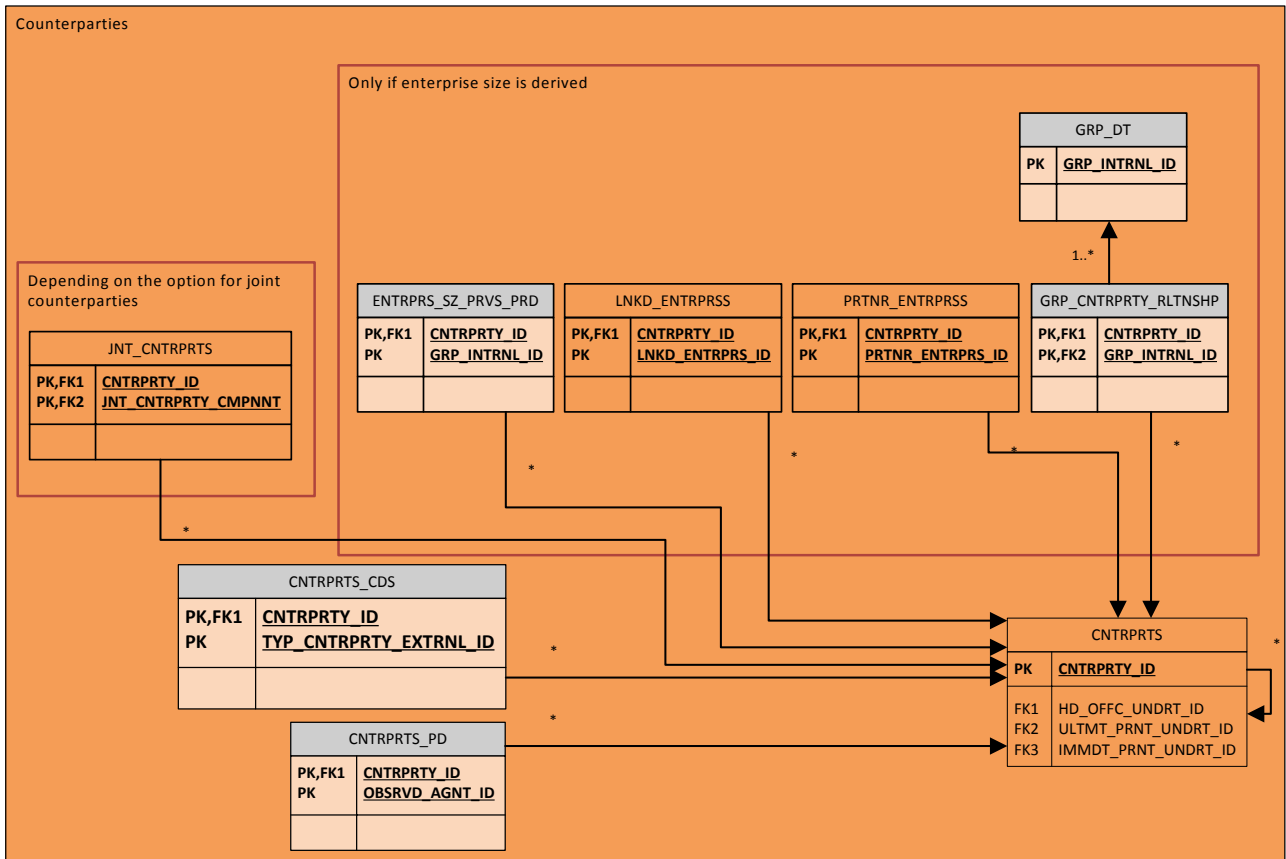


Chart 1: BIRD input layer blocks

3.1.1 Counterparties block



The central entity of this block is the Counterparties entity (CINTRPRTS). Counterparties represent the minimum unit to which an instrument can be associated, and therefore the level of granularity of the counterparties shall be the minimum unit for which reporting requirement exists.

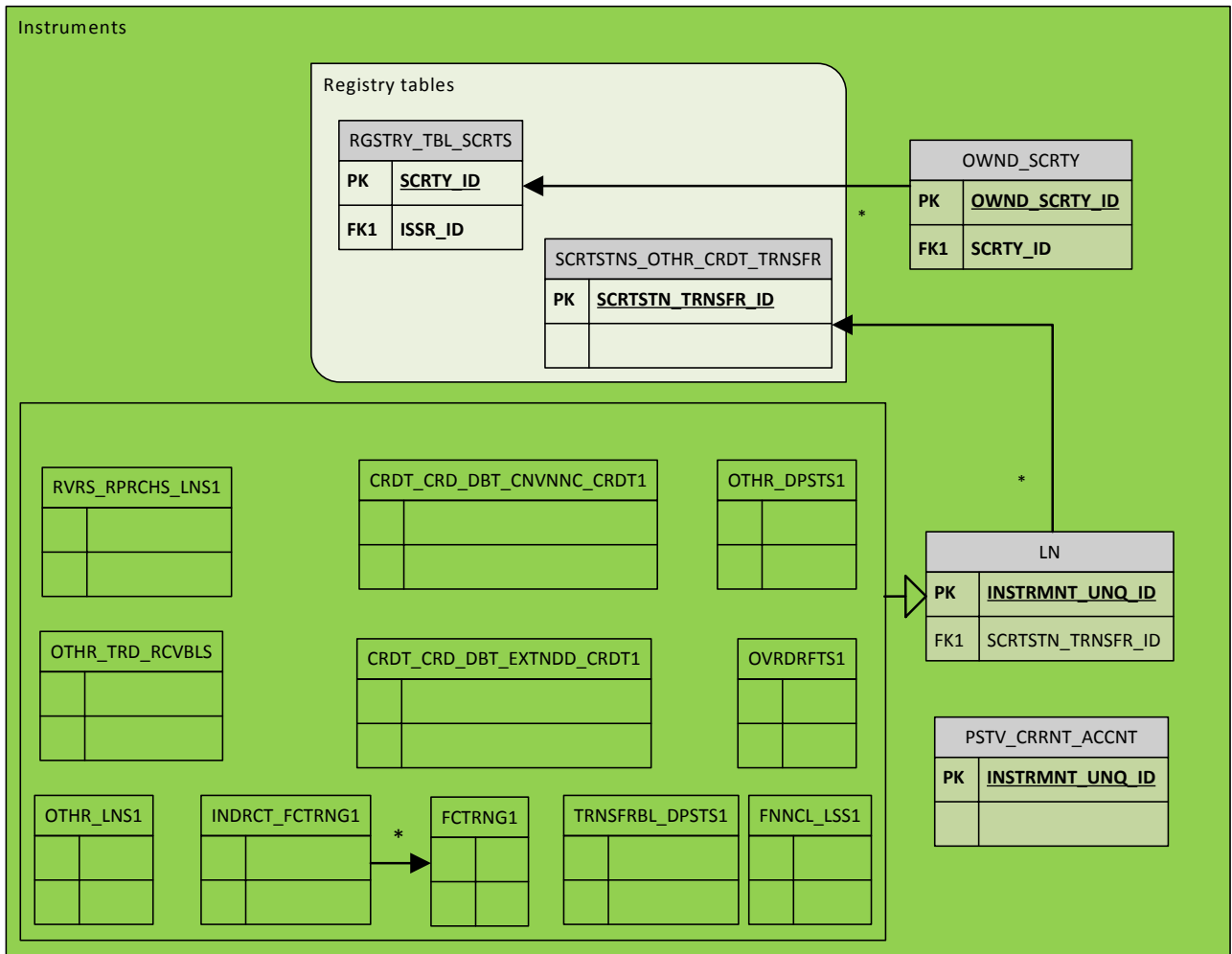
Counterparties are uniquely identified by an internal identifier, i.e. the *Counterparty identifier* (CNTRPRTY_ID). Head office undertakings, ultimate parent undertakings and immediate parent undertakings have to be represented also as counterparties.

The probabilities of default associated to one counterparty may differ depending on the observed agent, and therefore this information is provided in a separate entity (CINTRPRTS_PD)

For each counterparty, any number of codes can be attached by using the *Counterparty codes* (CNTRPRTY_CDS) entity.

Some additional entities related to counterparties may be necessary depending on BIRD options. For further information, refer to the chapter on joint liabilities (3.3.4) and the derivation of the enterprise size (5.1).

3.1.2 Instruments block



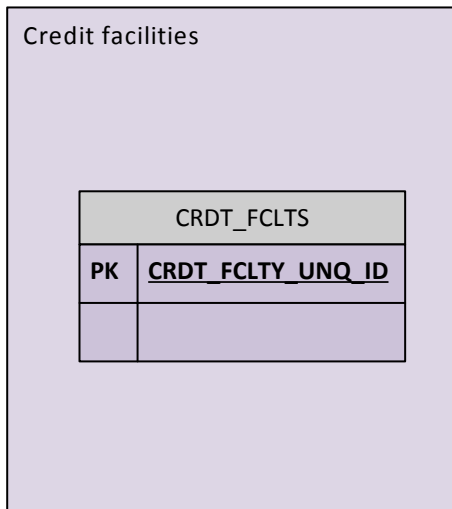
The instruments block contains information about financial instruments, including reference data about securities and about securitisations and other credit transfers.

The block contains three main entities with the information about financial instruments:

- *Loans (LN)* includes information on the loans granted by the observed agent. The loans are separated in different input cubes according to the type of instrument.
- *Positive current accounts (PSTV_CRRNT_ACCNT)* includes information on the credit balances on current accounts.
- *Owned securities (OWND_SCRTY)* contains the information on securities that are held by the observed agent.

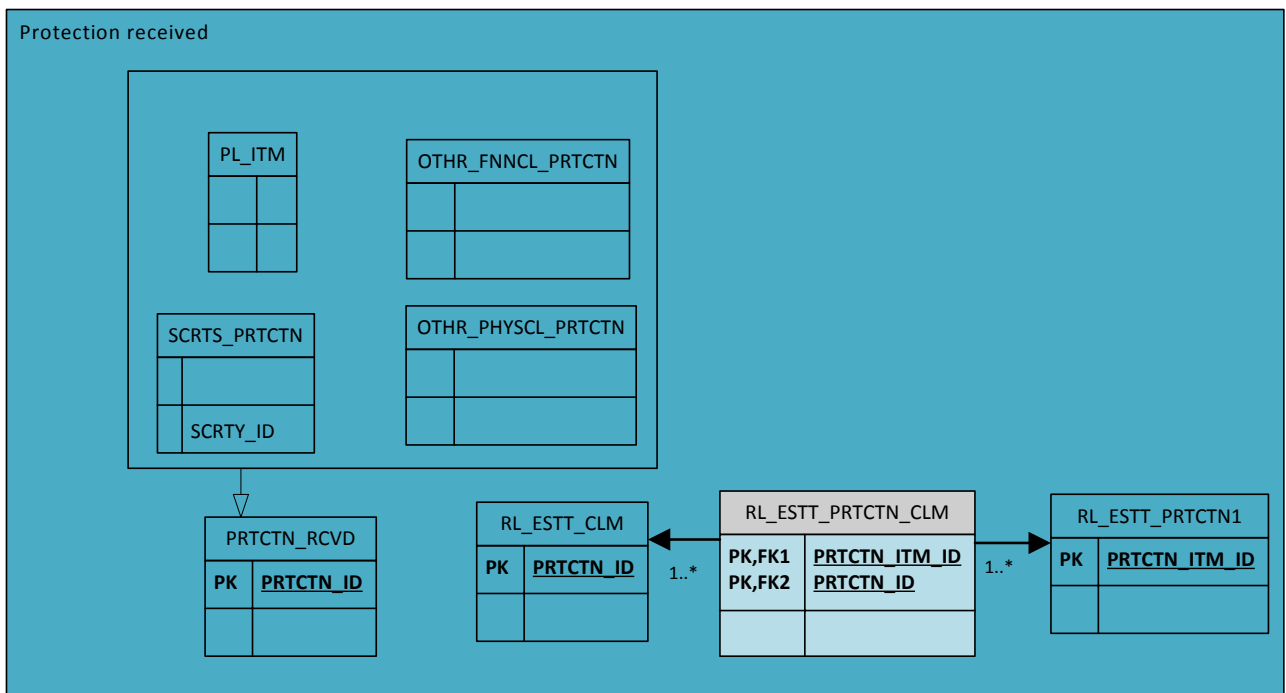
Additionally, this block contains two entities with master data for securities (**RGSTRY_TBL_SCRTS**) and securitisation and other credit transfer (**SCRTSTNS_OTHR_CRDT_TRNSFR**). Owned securities are linked to the registry table of securities. Loans can be linked to securitisation or other credit transfers.

3.1.3 Credit facilities block



The credit facility represents the banks' authorisation, which is the decision of the bank to grant credit to a customer. This block contains only one entity, which contains the information on the credit facilities of the bank.

3.1.4 Protection received block



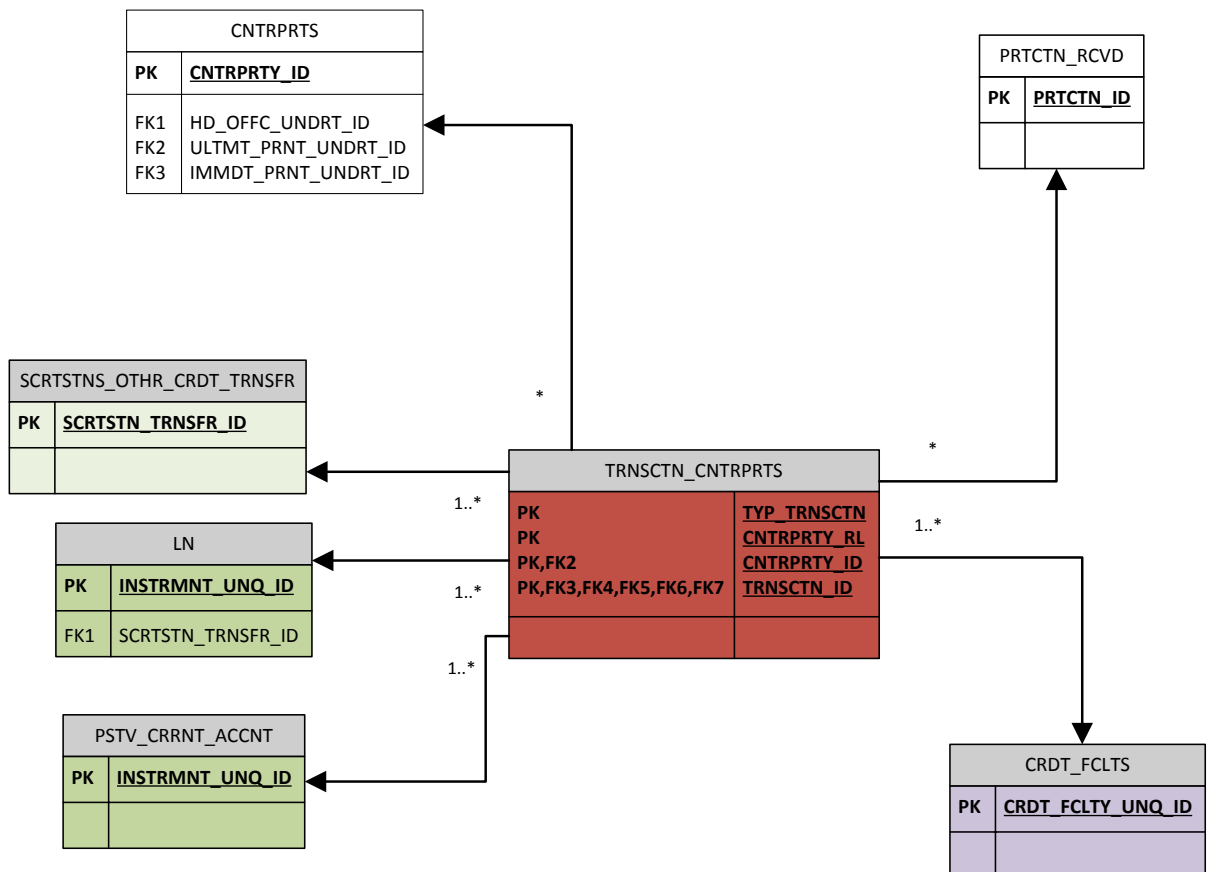
This block includes all the items that may serve as protection received by the entity for risk mitigation purposes. The level of granularity is the protection item. Protections are represented in five cubes, according to the nature of the protection. For real estate collateral, the actual protection is the claim, which represents a pool of real estate items.

3.1.5 Blocks connections

The blocks are connected among them via three entities: Transactions-Counterparties (TRNSCTN_CNTRPRTS), Instruments-Protections (INSTRMNTS_PRTCTNS) and Credit Facilities-Instrument (CRDT_FCLTS_INSTRMNT)

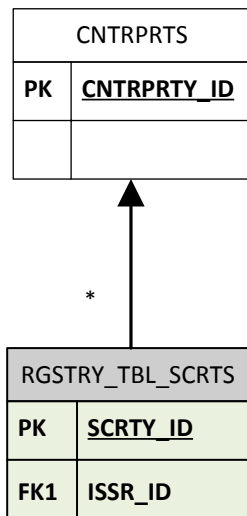
3.1.5.1 Connection of counterparties

Counterparties are connected to the rest of the blocks with the transactions-counterparties (TRNSCTN_CNTRPRTS) entity:



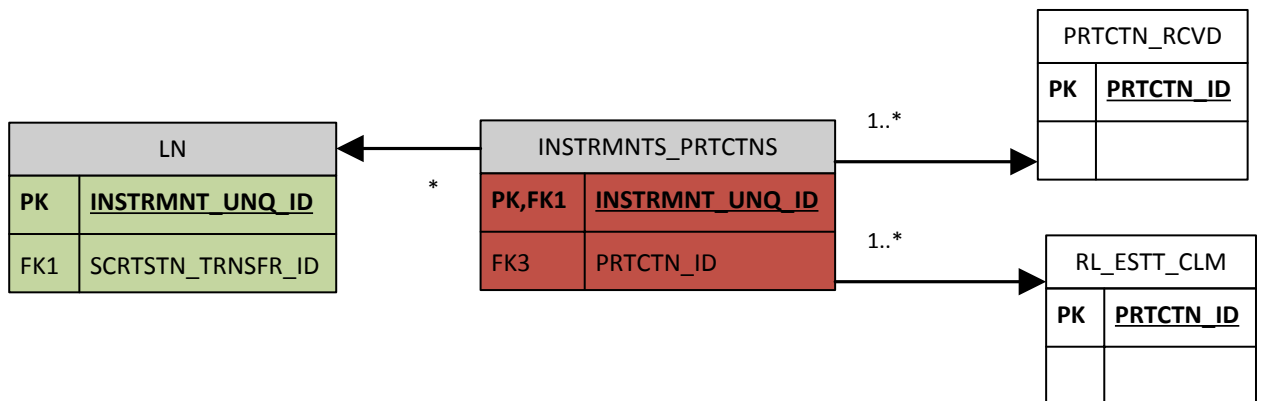
The type of transaction specifies whether the Transaction ID refers to an instrument unique ID, a securitisation transfer ID, a protection ID or a credit facility ID.

Additionally, securities have a direct connection to counterparties:



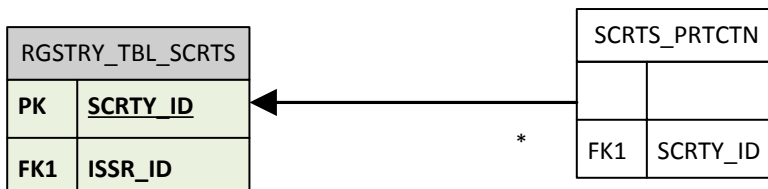
3.1.5.2 Connection of protections

Loans can be protected by zero to many protections. Real estate claim protections are separated from the rest due to their special characteristics.



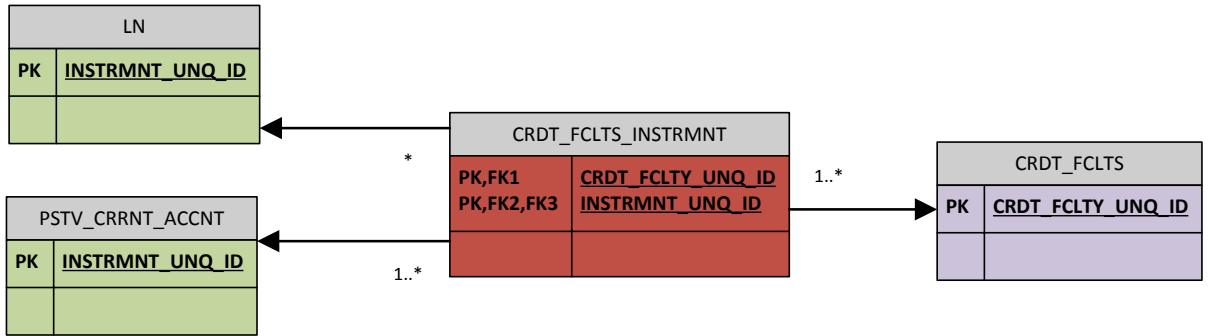
The connecting cube includes the variable type of transaction, which serves to determine whether the link of the loan is with a real estate protection or other kind of protection.

The securities protections are linked to the registry table of securities.



3.1.5.3 Connection of instruments and credit facilities

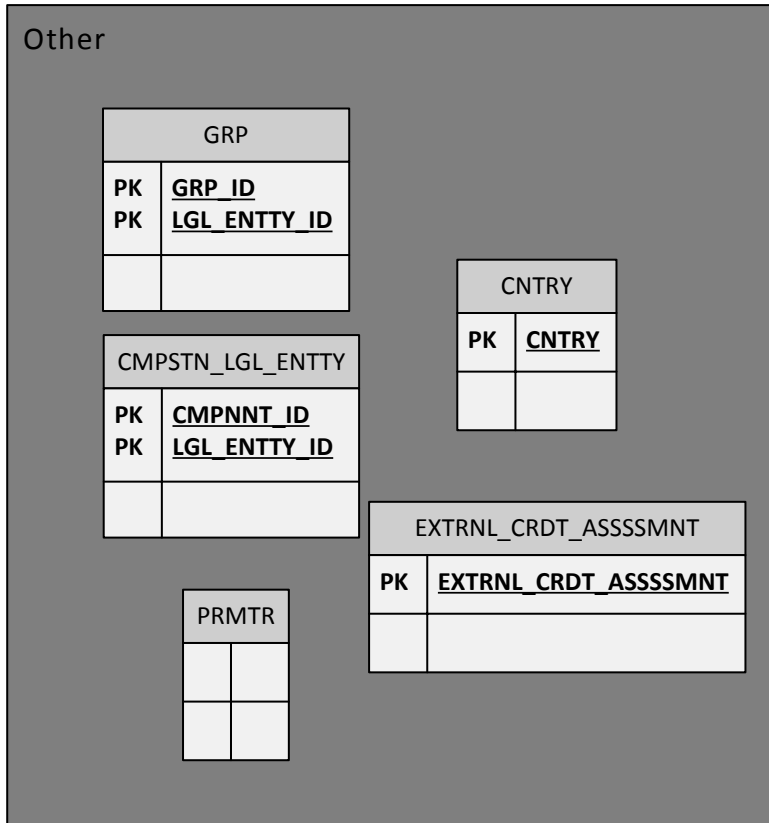
Loans may have associated zero to many protections. Positive current accounts will necessarily have an associated credit facility, given that only those positive current accounts in the scope of AnaCredit are to be reported. Although there may be credit facilities not associated to any loan or positive current account, in the current context of the BIRD those should not be included in the input layer, and therefore the credit facilities will necessarily be associated to at least one instrument (loan or positive current account), and one credit facility may be associated to more than one instrument.



The connecting cube includes the variable type of transaction, which serves to determine whether the link of the credit facility is with a loan or a positive current account.

3.1.6 Other entities

The input layer includes other cubes used for driving the processes:



The cube group describes the group structure, head of the group and subsidiaries. The cube composition of legal entity describes the structure of the legal entity, foreign branches belonging to the legal entity.

The cube parameters contains parameters regarding the reporting agent and the reference date that the BIRD is considering, this give you the time of the snapshot BIRD is representing.

The Countries reference information (CNTRY) and external credit assessment (EXTRNL_CRDT_ASSSSMNT) cubes include reference information required to derive the exposure class under the standardised approach.

3.2 Instruments, credit facilities and related entities

3.2.1 Loans

The loans entity groups all the input cubes with information about instruments with loans characteristics. The level of granularity of these cubes is the single instrument, which is determined by the type of instrument.

CUBE_ID	DESCRIPTION
CRDT_CRD_DBT_CNVNNC_CRDT	Credit card debt: convenience credit
CRDT_CRD_DBT_EXTNDD_CRDT	Credit card debt: extended credit
FCTRNG	Factoring

CUBE_ID	DESCRIPTION
INDRCT_FCTRNG	Indirect factoring
FNNCL_LSS	Financial leases
OTHR_DPSTS	Other deposits
OTHR_LNS	Other loans
OTHR_TRD_RCVBLS	Other trade receivables
OVRDRFTS	Overdrafts
RVRS_RPRCHS_LNS	Reverse repurchase loans
TRNSFRBL_DPSTS	Transferable deposits

Note that indirect factoring is linked to factoring, since one factoring instrument may have associated several indirect factoring instruments.

The instruments are separated in different input cubes according to the type of instrument.¹ The input classification is described below in Table 1, with a mapping to AnaCredit and FinRep (see Commission Implementing Regulation (EU) No 680/2014) requirements.

The present input classification is sufficient to produce the types of loans used in AnaCredit, FinRep, Balance Sheet Items (BSI) and Monetary Interest Rates (MIR) of the monetary financial institution sector (see Regulation (EU) No 1071/2013 of the European Central Bank and Regulation (EU) No 1072/2013 of the European Central Bank).

The general distinction between “deposits” and “loans” as defined in Regulation (EU) No 549/2013 (ESA 2010) is followed.

The categories of “revolving loans” and “credit lines other than revolving credit” are identified by two specific variables: *Is revolving loan (IS_RVLVNG_LN)* and *Is credit line other than revolving credit (IS_CRDT_LN_OTHR_RV_CRDT)*, respectively.

The institution shall ensure that each instrument is uniquely identified by the *Instrument unique identifier (INSTRMNT_UNQ_ID)*. The *Contract identifier (CNTRCT_ID)* and *Instrument identifier (INSTRMNT_ID)*, as defined in the AnaCredit Regulation, are present as separate variables. In practice the institution may create the unique identifiers as the union of these two variables.

The cubes of instruments must normally be fed as from the moment when the loan is disbursed or the money is deposited. However for some operations, such as credit card and overdraft, they have to be fed from the moment when the credit is made available to the debtor. For some specific cases see paragraph 3.2.6.

In some situations, in order to fulfil AnaCredit requirements, the cubes have to be kept in the input layer beyond the natural life of the operations. In particular:

- Written-off instruments (see AnaCredit Manual, part I, paragraph 5.2.2.2.1). The cubes must be kept until the end of the reporting period (or longer if the client is above the threshold without considering written off amounts).
- Defaulted instruments that cease existing because of full repayment (see draft AnaCredit Manual, part II, paragraph 3.5.15.1). The cubes must be kept until the end of the reporting period.

¹ This classification was obtained by assessing the information that banks have in their operational systems, with the aim of creating a common classification to which banks can easily map their internal categories. The difficulty to define detailed categories applicable at European level has led to a classification quite close to output requirements.

Table 1

<i>BIRD input layer</i>	<i>FinRep</i>		<i>AnaCredit</i>	
<i>Name</i>	<i>Item</i>	<i>Type of link</i>	<i>Item</i>	<i>Type of link</i>
Transferable deposits	On demand [call] and short notice [current account]	It is a part of the FinRep item	Deposits other than reverse repurchased agreements	It is a part of the AnaCredit item
Other deposits	On demand [call] and short notice [current account] or Other term loans	Classification depends on the short notice	Deposits other than reverse repurchased agreements	It is a part of the AnaCredit item
Overdrafts	On demand [call] and short notice [current account]	It is a part of the FinRep item	Overdrafts	It is a part of the AnaCredit item
Reverse repurchase loans	Reverse repurchase loans	Exact correspondence	Reverse repurchase agreements	Exact correspondence
Credit card debt: convenience credit	Credit card debt	Exact correspondence	Credit card debt	Exact correspondence
Credit card debt: extended credit	Credit card debt	Exact correspondence	Credit card debt	Exact correspondence
Financial leases	Finance leases	Exact correspondence	Financial leases	Exact correspondence
Factoring	Trade receivables	It is a part of the FinRep item	Trade receivables or Revolving credit other than overdrafts and credit card debt or Credit lines other than revolving credit	Classification depends on the two specific variables
Indirect factoring	Trade receivables	It is a part of the FinRep item	Trade receivables or Revolving credit other than overdrafts and credit card debt or Credit lines other than revolving credit	Classification depends on the two specific variables
Other trade receivables	Trade receivables	It is a part of the FinRep item	Trade receivables or Revolving credit other than overdrafts and credit card debt or Credit lines other than revolving credit	Classification depends on the two specific variables
Other loans	Other term loans	It is a part of the FinRep item	Other loans or Revolving credit other than overdrafts and credit card debt or Credit lines other than revolving credit	Classification depends on the two specific variables
Positive current accounts			Overdrafts	It is a part of the AnaCredit item

Specificities concerning factoring

Factoring transactions in the BIRD model are represented using the cubes *Factoring (FCTRNG)* and *Indirect factoring (INDRCT_FCTRNG)*. Instances of the cube *Factoring* represent factoring operations between the “factor” (i.e. the entity buying invoices) and the “factoring client” (i.e. the entity selling the invoices) while instances of the cube *Indirect factoring* represent the individual invoices of a factoring operation if such detail of information is required by the output requirements.

As one factoring transaction can contain multiple invoices and one invoice is always related to one factoring transaction the relation between such a factoring transaction (i.e. an instance of the cube *Factoring*) and its invoices (i.e. instances of the cube *Indirect factoring*) is of the type *one-to-many*. This relationship is established by the variable *Connected factoring operation identifier* (which contains the *Instrument unique identifier* of the factoring transaction) in the cube *Indirect factoring*.

The distinction between factoring “with recourse” and “without recourse” is represented in the cube *Factoring*.

With respect to AnaCredit

In case a possible cash reserve in such a factoring operation is not represented as a protection in the internal banking system the following variables in the cube *Factoring* need to be provided by the reporting agent:

- *Cash reserve amount (CSH_RSRV_AMNT)*
- *Original cash reserve amount (ORGNL_CSH_RSRV_AMNT)*
- *Date of original cash reserve amount (DT_ORGNL_CSH_RSRV_AMNT)*
- *Maturity date of the cash reserve (DT_MTRTY_CSH_RSRV)*
- *Generate cash reserve (GNRT_CSH_RSRV)*

The first four variables are necessary to generate an artificial cash reserve protection as required by the AnaCredit framework. The variable *Generate cash reserve* acts as a flag to distinguish those factoring operations where such an artificial cash reserve should be generated.

3.2.2 Positive current accounts

Positive current accounts are credit balances on current accounts. They represent liabilities for the reporting institution, but are included in the BIRD input layer in order to enable generating the records for the associated credit lines, because in these cases there will be no instrument in the scope of AnaCredit, but still the off-balance sheet amount has to be reported.

In the context of this version of the BIRD, positive current accounts need to be associated to a credit facility, because in case a positive current account is not associated to one, it will be fully out of the scope of AnaCredit and should not be included in the input layer.

3.2.3 Securities data

3.2.3.1 Registry table of securities

The master data for securities is included in a single cube, where the level of granularity is the security.

CUBE_ID	DESCRIPTION
RGSTRY_TBL_SCRTS	Registry table of securities

The *Registry table of securities (RGSTRY_TBL_SCRTS)* contains registry information on securities, characteristics of the securities that are stable over time. The cube is used mainly to feed the Security Holding Statistics (SHS) reporting requirements and to describe specific protections in AnaCredit reporting.

The cube key is the internal security identifier, by which it is possible to uniquely identify the security, also in case of security without ISIN code.

The cube is linked to the owned security cube via the security ID; it is also linked with the counterparty cube via the issuer ID that is described in details in cube counterparty.

3.2.3.2 Owned securities

The data for securities characteristics is dependent on the reporting agent evaluation. The level of granularity is the owned security ID, an identifier that identifies each record in the owned security table.

CUBE_ID	DESCRIPTION
OWND_SCRTY	Owned securities

The cube *Owned securities (OWND_SCRTY)* contains information on the securities owned by the institution. The cube describes the ownership of the securities and the characteristics of the securities that depend on the reporting agent evaluation.

The cube has been created for the scope of SHS reporting.

The cube contains the variable perspective (PRSPCTV) to distinguish whether the level of reporting is on a consolidated basis or an individual basis. The BIRD group has identified the variables that may be affected by the different reporting basis:

- Accounting classification
- Capital calculation approach for prudential purposes
- Exposure class
- Impairment status
- Accumulated changes in fair value due to credit risk
- Accumulated impairment
- Accrued interest
- Carrying amount
- Exposure value
- Gross carrying amount excluding accrued interest
- Impairment assessment method

- Loss given default in downturns
- Loss given default in normal economic times
- Risk weight

3.2.3.3 Special characteristics for SHS reporting

Some information needed to satisfy SHS requirements will be derived by transformation rules.

In particular, the instrument classification according to ESA 2010 will be obtained by the variables *Type of security* (*TYP_SCRTY*), *Is short term* (*IS_SHRT_TRM*) and *Is listed* (*IS_LSTD*), which are required in the input cube *Registry table of securities*.

Moreover, the instrument seniority type will be derived by using three different input variables: *Security level* (*SCRTY_LVL*), *Security rank level* (*SCRTY_RNK_LVL*) and *Security Guarantee level* (*SCRTY_GRNT_LVL*).

Specific rules are developed to calculate the exposure class and the risk weight when the standardised approach is adopted. The institution may also assign the exposure class and the risk weight directly as input information.

3.2.4 Securitisations and other credit transfers

SCRTSTNS_OTHR_CRDT_TRNSFRS [Securitisations and other credit transfers]	
PK	SCRTSTN_TRNSFR_ID [Securitisation/transfer identifier]

This entity includes the information related to securitisations and other credit transfer. The level of granularity is the credit transfer.

CUBE_ID	DESCRIPTION
SCRTSTNS_OTHR_CRDT_TRNSFRS	Securitisations and other credit transfers

3.2.4.1 Registry cube “Securitisations and other credit transfers” (SCRTSTNS_OTHR_CRDT_TRNSFRS)

Input information on securitisations and other credit transfers is based on a registry cube where all data concern each operation. In this way data redundancy is avoided and the consistency of the information produced is ensured.

This cube comprises information on securitisations, as defined in Article 4.1(61) of CRR, and other sales of assets. It must be filled:

- a) when the securitisation or the credit transfer originates from the institution and the transferred assets are recognised in its balance sheet; or

- b) when the transferred assets are serviced by the institution, both in the case the securitisation or the credit transfer originates from the institution, and in the case it originates from another entity.

The structure of the cube is composed of the following variables²:

Securitisation/transfer identifier (SCRTSTN_TRNSFR_ID)

It univocally identifies each securitisation or credit transfer.

Type of risk transfer (TYP_RSK_TRNSFR)

- 1 = traditional securitisation (as defined in Article 241(10) of CRR);
- 2 = synthetic securitisation (as defined in Article 241(11) of CRR);
- 3 = other credit transfer.

Treatment of securitised/transferred assets in balance sheet (TRTMNT_TRNSFRRD_ASSTS_BLNC_SHT)

- 0 = not applicable (operation originated by another entity);
- 1 = entirely recognised;
- 2 = recognised to the extent of the institution's continuing involvement;
- 3 = entirely derecognised.

Is re-securitisation (IS_RSCRTSTN)

It identifies re-securitisations according to CRR, article 4.1(63).

- 0 = not applicable (for other credit transfers);
- T = true;
- F = false.

Significant risk transfer (SGNFCNT_RSK_TRNSFR)

It identifies securitisations where the originator has transferred significant credit risk (Part three, Title II, Chapter 5 of CRR) and it has decided to apply paragraph 1 of article 245.

- 0 = not applicable (for other credit transfers and for securitisations originated by another entity);
- T = true;
- F = false.

3.2.4.2 Variables in the cubes of instruments and credit facilities

The following variables must be compiled in the cubes of loans/deposits and credit facilities:

Securitisation/transfer identifier (SCRTSTN_TRNSFR_ID)

- See above.

Relationship with securitisation or credit transfer (RLTNSHP_SCRTSTN_CRDT_TRNSFR)

- 0 = not applicable (no relationship);

² If a partial transfer occurs, the information refers to what is transferred.

- 1 = securitised/transferred asset;
- 2 = exposure to a securitisation or to a credit transfer;
- 3 = credit to the vehicle deriving from the reimbursement of securitised assets;
- 4 = exposure to a securitisation subject to re-securitisation.

Value 3 must be used for the credit that arises if the originator recognises the transferred assets in its balance sheet, and a part of securitised assets are reimbursed before the ABS, and there are no associated liabilities (e.g. in case of self-securitisations), and the vehicle deposits the liquidity at another institution³.

Value 4 is present only for owned securities.

Percentage transferred⁴ (PRCNTG_TRNSFRD)

Percentage of the *Outstanding nominal amount* that has been transferred (sold). It is used to derive the transferred amount, as defined by the AnaCredit Regulation.

Original securitisation identifier (ORGNL_SCRTSTN_ID)

It univocally identifies the original securitisation in case of re-securitisations where the institution is the originator. It is present only in the cube of *Owned securities*.

3.2.4.3 Information to be provided in the cube Transactions-Counterparties (TRNSCTNS_CNTRPTS)

In the cube *Transactions-Counterparties* each securitisation/transfer is a transaction, whose identifier is expressed by the *Securitisation/transfer identifier*. For a traditional securitisation the originator and the transferee must be provided. The servicer of the securitisation can also be provided; however, if the transferred instruments are individually serviced by different servicers, this role has to be linked to the single instruments. Consequently these entities have to be registered in the cube *Counterparties*.

3.2.4.4 Specific instructions for some operations

Traditional securitisation where the reporting institution is the originator and it entirely recognises securitised loans

Cubes of instruments

The bank includes the securitised assets (variable *Relationship with securitisation or credit transfer* = "securitised/transferred asset") and securitisation positions (variable *Relationship with securitisation or credit transfer* = "exposure to a securitisation or to a credit transfer"), if any, and in every instance of them it provides the *Securitisation/transfer identifier*.

For securitised assets the variable *Percentage transferred* is fed.

The variable *Sources of encumbrance* is "deposits other than repurchase agreements" for securitised assets; it is "not applicable" for securitisation positions if they are entirely derecognised.

³ This piece of information is mainly needed for CoRep. AnaCredit and SHS frameworks don't require a separate identification of this credit.

⁴ This variable is not present in the cube *Credit facilities*.

Cube Securitisations and other credit transfers

The features of the securitisation are provided. In particular:

- the variable *Type of risk transfer* is “traditional securitisation”;
- the variable *Treatment of securitised/transferred assets in balance sheet* is “entirely recognised”.

Cube Transactions-Counterparties

With the securitisation/transfer identifier as *Transaction identifier* and the *Type of transaction* = “Securitisation/Transfer”, the bank provides the *Counterparty identifier* of the following instances of the variable *Counterparty role in a transaction*:

- the “Originator”, which is the bank itself;
- the “Transferee”, which is the vehicle to which the assets have been transferred;
- the “Servicer”, which is the servicer of the securitisation⁵.

Traditional securitisation where the reporting institution is the originator and it entirely derecognises securitised loans

The variable *Treatment of securitised/transferred assets in balance sheet* in the cube *Securitisations and other credit transfers* is “entirely derecognised”.

If the bank is the servicer, it has to provide the same information⁶ described for traditional securitisations where loans are entirely recognised. The same cubes of recognised assets have to be fed.

If the bank is not the servicer, only information concerning securitisation positions has to be fed in the input layer.

The variable *Sources of encumbrance* is “not applicable” for securitised assets; it is “no encumbrance” for securitisation positions unless they are encumbered in other transactions.

Traditional securitisation originated by another entity where the reporting institution is the servicer

For traditional securitisations where the bank is not the originator the variable *Treatment of securitised/transferred assets in balance sheet* in the cube *Securitisations and other credit transfers* is “not applicable”.

The bank has to provide the same information described for traditional securitisations where loans are entirely derecognised, including the variable *Percentage transferred*. The same cubes of recognised assets have to be fed.

The variable *Sources of encumbrance* is “not applicable” for securitised assets.

Self-securitisation

Self-securitisations are not distinguished from traditional securitisations where transferred assets are entirely recognised.

The variable *Sources of encumbrance* is “no encumbrance” for securitised assets if the ABS are not encumbered in other transactions.

⁵ In case the transferred instruments are individually serviced by different servicers, this role has to be linked to the single instruments.

⁶ At the present stage the variables that are not required to produce AnaCredit (see Annex II of AnaCredit Regulation) may not be provided.

Loan transfer aimed at issuing covered bonds

Cubes of instruments

The bank includes the sold assets (variable *Relationship with securitisation or credit transfer* = “securitised/transferred asset”) and in every instance of them it provides the *Securitisation/transfer identifier*. The variable *Percentage transferred* is fed.

If the bank is financing the operation, it also has to include the loan to the vehicle for the purchase of the assets (variable *Relationship with securitisation or credit transfer* = “exposure to a securitisation or to a credit transfer”).

The variable *Sources of encumbrance* is “debt securities issued – covered bonds securities” for transferred assets; it is “not applicable” for the exposures to the credit transfer if they are entirely derecognised.

Cube Securitisations and other credit transfers

The features of the operation are provided. In particular:

- the variable *Type of risk transfer* is “other credit transfer”;
- the variable *Treatment of securitised/transferred assets in balance sheet* is “entirely recognised”.

At this stage, it is not needed to distinguish the case where the bank is financing from the case where another institution is financing.

Cube Transactions-Counterparties

With the securitisation/transfer identifier as *Transaction identifier* and the *Type of transaction* = “Securitisation/Transfer”, the bank provides the *Counterparty identifier* of the following instances of the variable *Counterparty role in a transaction*:

- the “Transferee”, which is the vehicle to which the assets have been transferred;
- the “Servicer”, if there is a servicer of the whole operation different from the bank itself.

Warehousing

The bank must feed the input variables related to securitisations (“percentage transferred” included) also when the operation is in the warehousing phase.

At this stage, it is not needed to identify warehousing and to distinguish the case where the bank is financing from the case where another institution is financing.

Securitisation with two vehicles

In a securitisation where securitised assets are sold to a vehicle, which in turn sells them to another vehicle that issues ABS, the following criteria must be followed to feed the cube *Transactions-Counterparties*:

- the second vehicle has the role of “transferee”;
- the original seller has the role of “originator”.

Securitisation with resale of loans

In a securitisation where securitised assets are sold to a financial intermediary, which in turn sells them to a vehicle that issues ABS, the following criteria must be followed to feed the cube *Transactions-Counterparties*:

- the vehicle has the role of “transferee”;
- the financial intermediary has the role of “originator”.

Synthetic securitisation originated by the reporting institution

Cubes of instruments

The bank includes the securitised assets (variable *Relationship with securitisation or credit transfer* = “securitised/transferred asset”) and securitisation positions (variable *Relationship with securitisation or credit transfer* = “exposure to a securitisation or to a credit transfer”), if any, and in every instance of them it provides the *Securitisation/transfer identifier*.

For securitised assets the variable *Percentage transferred* is zero.

Cube Securitisations and other credit transfers

The features of the securitisation are provided. In particular:

- the variable *Type of risk transfer* is “synthetic securitisation”;
- the variable *Treatment of securitised/transferred assets in balance sheet* is “entirely recognised”.

Cube Transactions-Counterparties

With the securitisation/transfer identifier as *Transaction identifier* and the *Type of transaction* = “Securitisation/transfer”, the bank provides its own *Counterparty identifier* as “originator” if it follows the definition contained in Regulation (EU) No 1075/2013. If the transfer of risk is achieved by the use of an instrument that qualifies as protection, the bank has also to provide the *Counterparty identifier* of the “protection provider”. In this case, information concerning the protection has to be provided in the cubes pertaining to the protection received, the protection valuation and the link between protection and instruments.

A case study is described below, with some specific indications on the compilation of the input layer.

CASE STUDY

Description

The bank signs a contract with an investor in order to partially transfer the risk of a pool of loans (1,000 loans for a total amount of 5 million euros). At the beginning of the transaction loans are performing. The investor deposits cash collateral of 200,000 at the bank. Any time that for each loan there is a triggering event of default and the bank has to make a provision, the bank itself can use the cash collateral for 95% of the provision (5% is the percentage of loss retained by the bank).

Example: if the loan is 100,000, it is defaulted since 1 of June, and the provision that the bank has booked at the end of June is 5,000 euros, an amount of 4,750 euros (95% of 5,000) will be withdrawn by the bank from the cash collateral deposited within the bank.

Note: in CoRep the cash collateral is used in the credit risk mitigation; in FinRep it is considered as collateral received in all related information.

Input layer

Cubes of instruments

1,000 records with:

- *Relationship with securitisation or credit transfer* = securitised/transferred asset
- *Securitisation/transferred identifier* = SEC1
- *Percentage transferred* = 0

Cube Securitisations and other credit transfers

1 record with:

- *Securitisation/transferred identifier* = SEC1
- *Type of risk transfer* = synthetic securitisation

- *Treatment of securitised/transferred assets in balance sheet* = entirely recognised

Cube Transactions-Counterparties

The same records as before the securitisation, plus 1 new record with:

- *Counterparty identifier* = ID of the investor
- *Counterparty role in a transaction* = protection provider
- *Transaction identifier* = PROTID1
- *Type of transaction* = protection

Cube Other financial protection

1 record with:

- *Protection identifier* = PROTID1
- *Type of protection* = currency and deposits

Cube Protection value

1 record with:

- *Protection identifier* = PROTID1
- *Protection valuation date* = ddmmyyyy
- *Type of protection value* = notional amount
- *Protection value* = 200,000
- *Protection valuation approach* = other type of valuation

Cube Instruments-protections

1,000 records with:

- *Protection identifier* = PROTID1
- *Instrument unique identifier* = the ID of each loan
- *Protection allocated value* = the result of the allocation of 200,000 to the loans, which should take into account the loss retained by the bank

3.2.5 Credit facilities and Credit facilities-Instruments

CUBE_ID	DESCRIPTION
CRDT_FCLTS	Credit facilities
CRDT_FCLTS_INSTRMNTS	Credit facilities-Instruments

In a loan there are normally two elements: 1) the authorization, which is the decision of the bank to grant credit to a customer; and 2) the disbursement of money. The credit facility represents the first element and it is defined as follows:

“The commitment (revocable or irrevocable) made by a financial institution to make an amount of money available to the customer (or a plurality of customers), or to assume for it an obligation to a third party. The commitment is based on an agreement between the financial institution and the customer, which originates from a request of the customer or an acceptance by the customer of a proposal from the financial institution.”

Analogously to instruments, the institution shall ensure that each credit facility is uniquely identified by the *Credit facility unique identifier (CRDT_FCLTY_UNQ_ID)*. The connection between credit facilities and instruments is described by the cube *Credit facilities-Instruments (CRDT_FCLTS_INSTRMNTS)*, which associates the *Credit facility unique identifier* and the *Instrument unique identifier*.

In general terms, credit facilities can be linked to one or many instruments (belonging or not to the same counterparty), the relation is many-to-many. The variable *Type of facility (TYP_FCLTY)* is equal to “specific” (value “1”) when it can be linked to only one instrument, and “non-specific” (value “2”) when it can be linked to more than one instrument. Some variables are typically applied to credit facilities, such as *Granted amount (GRNTD_AMNT)*, *Inception date (DT_INCPTN)*, *Commitment amount at inception (CMMTMNT_INCPTN)* and *Revocable (RVCBL)*. Other variables (currency, interest rate, payment frequency, etc.) normally present in the instrument cubes are also present in the credit facility cube, although at this stage they might not be necessary to satisfy AnaCredit requirements and in some circumstances they are not applicable (e.g. the payment frequency may not be defined in the contract of a non-specific credit facility).

In some cases a credit facility may not be present because of the nature of the instrument (e.g. deposits) or it may have been revoked; therefore, the variables *Inception date* and *Commitment amount at inception*, required for AnaCredit, are present in the instrument cubes. These variables are applicable to instruments when, in the context of non-specific credit facilities, the instrument is originated by a specific contractual relationship, separated from the original contract of the credit facility.

The cube *Credit facilities* may be compiled from the moment the credit is authorized. However, before the contract is signed by both parties, its compilation is not needed, because the related information doesn't need to be reported.

Off-balance sheet amount

The difference between the granted amount of a credit facility and the outstanding amount of related instruments generally generates an off-balance sheet amount. At this stage, the BIRD does not manage the allocation of the granted amount on the instruments. Consequently, the off-balance sheet amount is not calculated by BIRD transformation rules; it is instead an input variable *Off-balance sheet amount (OFF_BLNC_SHT_AMNT)*. In case of a specific credit facility, this variable may be filled in the cube *Credit facilities* if the instrument cube is not present (e.g. a loan signed but not yet disbursed); otherwise it must be filled in the instrument cube. In case of a non-specific credit facility, the institution may fill this variable both in the cube *Credit facilities* and in the instrument cubes.

3.2.6 Specific operations

The BIRD group has analysed specific case studies, in order to give instructions concerning the compilation of the instrument cubes in the input layer.

3.2.6.1 Instruments without a credit facility

Deposit account

General instructions

For deposit accounts that are not linked to a credit facility, the instrument cube must be fed if, at a reference date, there is a debit balance, that is to say the observed agent holds some money in the deposit account. If the amount deposited is zero, it is not necessary to feed the instrument cube.

Instructions for specific variables

Inception date: the date on which the account is opened.

Settlement date: the date on which the first deposit of money on that account is done.

Commitment amount at inception: 0.

Off-balance sheet amount: 0.

Reverse repurchase loan

General instructions

For reverse repurchase loans that are not linked to a credit facility, the instrument cube must be fed starting from the value date of the operation.

Instructions for specific variables

Inception date: the date on which the agreement is signed.

Settlement date: the value date.

Commitment amount at inception: the spot price agreed on the inception date.

Off-balance sheet amount: 0.

Loan whose credit facility has been revoked

General instructions

If the credit facility is revoked (e.g. because of counterparty's default), the instrument cube must be fed as long as some amount is drawn.

Instructions for specific variables

Inception date: the same as before the revocation.

Settlement date: the same as before the revocation.

Commitment amount at inception: the same as before the revocation.

Off-balance sheet amount: 0.

3.2.6.2 Instruments with a specific credit facility

Mortgage loan

General instructions

In case the money is disbursed after the stipulation of the contract (e.g. the bank waits for the legal completion of the mortgage deed and the time limit for bankruptcy clawback actions), the instrument cube must be fed when the loan is disbursed.

Instructions for specific variables

Inception date (on the credit facility): the date on which the contract is stipulated.

Settlement date: the date on which the loan is disbursed.

Commitment amount at inception (on the credit facility): the amount of the loan established by the contract.

Off-balance sheet amount: 0.

Credit card

General instructions

If the credit card has been issued, the instrument cube must be fed even if the balance for the bank is zero at the reference date or the client has not yet used the credit card. The instrument ID and the contract ID must remain the same, independently from the value of the balance.

Instructions for specific variables

Inception date (on the credit facility): the date on which the contract is signed.

Settlement date: it is absent if, at the reference date, the balance for the bank (i.e. the outstanding nominal amount) is zero. Otherwise it is the date on which the client uses the card for the first time.

Commitment amount at inception (on the credit facility): the limit established by the contract.

Off-balance sheet amount: the difference between limit established by the contract and the debit balance at the reference date.

Overdraft

General instructions

In case the bank authorises a client to draw money from a current account, the instrument cube must be fed once the credit facility is granted and the account is opened, even if the balance of the current account is zero. If the balance of the current account is positive for the bank, then the cube *Positive current accounts (PSTV_CRRNT_ACCNT)* must be fed. This cube is symmetric to the cube *Overdrafts (OVRDRFTS)* and for the same operation the same instrument unique identifier must be used, independently from the sign of the balance.

Instructions for specific variables

Inception date (on the credit facility): the date on which the contract is signed.

Settlement date: in the input cube *Overdrafts* it is absent if, at the reference date, the balance for the bank (i.e. the *Outstanding nominal amount*) is zero. Otherwise it is the date on which the debtor draws funds under the credit limit for the first time. In this case it is absent in the input cube *Positive current accounts*.

Commitment amount at inception (on the credit facility): the limit established by the contract.

Off-balance sheet amount: in the input cube *Overdrafts* it is the difference between the limit established by the contract and the debit balance at the reference date. In the input cube *Positive current accounts* it is the limit established by the contract.

3.2.6.3 Instruments with a non-specific credit facility

Export advances

Description

the bank grants a client a credit facility for export advances (amount 100); the uses of the credit facility that can be made from time to time have a lower amount, which is related to the individual delivery financed; at the reference date two loans (amounts 50 and 20) are present.

General instructions

The instrument cubes of the single loans must be fed starting from the date they are disbursed.

Instructions for specific variables

Inception date: for each loan it is the date of its own contract.

Settlement date: for each loan it is the date on which the loan is disbursed.

Commitment amount at inception: for each loan it is the amount disbursed at the settlement date.

Off-balance sheet amount: for each loan it is zero.

3.3 Counterparties and related entities

3.3.1 Counterparties

CUBE_ID	DESCRIPTION
CNTRPRTS	Counterparties

The central entity of this part of the model is the *Counterparties* entity. Counterparties represent the minimum unit to which an instrument can be associated, and therefore the level of granularity of the counterparties shall be the minimum unit for which reporting requirement exists.

Counterparties are uniquely identified by an internal identifier (i.e. the *Counterparty identifier* (CNTRPTY_ID)).

The entity *Enterprise size (previous period)* provides information on some values related to a counterparty but referred to a previous period. These values are used for derivation purposes.

The cube *Counterparties* (CNTRPRTS) contains information regarding all counterparties that are relevant for reporting purposes. It includes the reporting agent that processes the data, the group, the entity belonging to the group, the components (head office, foreign branches) of the legal entity to which it belongs and the issuer of the securities described in the table *Registry table of securities*. The institution shall ensure that in the input layer each counterparty is uniquely identified by its *Counterparty identifier* (CNTRPTY_ID).

The structure of this cube includes several variables pertaining to each counterparty. As regards the variable *Institutional sector* (INSTTTNL_SCTR) an input subdomain has been defined starting from the lists of sectors currently used in the various countries. The definitions of the input members are mainly based on Regulation (EU) No 549/2013, with some additional subdivisions in a way that can support the

production of AnaCredit, FinRep, Balance Sheet Items (BSI) and Monetary Interest Rates (MIR) of the monetary financial institution sector.

An additional variable named *Institutional sector control (INSTTTNL_SCTR_CNTRL)* has been created to include in the sector classification the information on the control that is requested in ESA 2010 specific sectors as described by subsectors defined in ESA 2010 Chapter 2. This input information, combined with the *Institutional sector* is used to generate the sector classification required by the Security Holding Statistics (SHS) reporting requirements.

As regards the variable *Country of residence (CNTRY)*, the input subdomain does not include the codes identifying international organisations. The latter are present in the subdomain of the variable *International organisations (INTRNTNL_ORGNSTN)*.

The variable accounting framework solo (ACCNTNG_FRMWK_SL) should be reported in case the counterparty is part of the group involved in the reporting, in other term the counterparty and the Institution (INSTTTN_ID) defined in cube parameter are part of the same group. Finally, the composition of the group is defined in the cube *Group (GRP)* while subcomponents (e.g. branches) of the legal entity are described in the cube *Composition of the legal entity (CMPSTN_LGL_ENTTY)*.

3.3.2 Counterparty probability of default

CUBE_ID	DESCRIPTION
CNTRPRTS_PD	Probability of default of the counterparty

The cube describes the Probability of default (PD) of the counterparty.

In the cube there are two dimensions the counterparty ID and the observed agent (OBSRVD_AGNT_ID). The Probability of default (PD) of a counterparty may vary according to the subject that is evaluating it so called observed agent. The BIRD team has identified cases (even if marginal) in which the PD may vary across the group as when the PD of one subsidiary of the group is different from the PD assigned at the level of the group. The observed agent ID gives the information on who is evaluating the PD inside the group structure, this is needed considering that the BIRD can manage simultaneously the information related to a group and the information related to the entities belonging to the group.

Moreover considering the BIRD capability to manage consolidated statement information and individual statement information the variable perspective is included in the cube to distinguish the two level of reporting.

3.3.3 Counterparty codes

One counterparty might have several different identifiers provided by different authorities, other than the internal identifier. The identifiers for the counterparties required by reporting regulations are represented in the *Counterparties* entity itself (i.e. the variable *National identifier (NTNL_ID)*), whereas other possible identifiers used by the reporting institution are included in a separate entity, *Counterparty codes (CNTRPRTS_CDS)*.

For each counterparty there might be several records (i.e. several *Counterparty external identifiers (CNTRPTY_EXTRNL_ID)*) distinguished by their *Type of counterparty external identifiers (TYP_CNTRPTY_EXTRNL_ID)*.

There is one input cube corresponding to the *Counterparties codes* entity:

CUBE_ID	DESCRIPTION
CNTRPRTS_CDS	Counterparty codes

3.3.4 Joint liabilities

Two approaches are currently followed by banks to handle joint liabilities:

- 1) the joint liability is treated as a specific counterparty;
- 2) only the components of the joint liability are considered as counterparties.

The solution adopted for the BIRD input layer is compatible with both approaches. Some information is related to both approaches. In particular for cube *Counterparties (CNTRPRTS)*:

- *Counterparty identifier*
- Other variables related to the counterparty (name, institutional sector, NACE, country, etc.)
- *Note: in approach 1 the joint counterparty has got a specific identifier.*

For all the cubes related to instruments:

- *Instrument unique identifier*
- Other variables related to the instrument (currency, purpose, interest rate, outstanding nominal amount, etc.)

For the cube *Transactions-Counterparties (TRNSCTNS_CNTRPRTS)*:

- *Counterparty identifier*
- *Transaction identifier*
- *Counterparty role in a transaction*
- *Note: in case of an instrument to a joint counterparty, for approach 1 there is only one record, whereas for approach 2 there are several records.*

Under approach 1 (the joint liability is treated as a specific counterparty) the following information has to be provided.

For cube *Joint counterparties (JNT_CNTRPRTS)*:

- *Counterparty identifier*
- *Joint counterparty component (JNT_CNTRPTY_CMPNNT)*
- *Joint counterparty percentage (JNT_CNTRPTY_PRCNTG)* (by multiplying it by the outstanding nominal amount, the joint liability amount can be obtained)

For approach 2 (only the components of the joint liability are considered as counterparties) the following information has to be reported.

For cube *Transactions-Counterparties (TRNSCTNS_CNTRPRTS)*:

- *Joint liability (JNT_LBLTY)*, which can assume the values 0 (= no joint liability), 1 (= joint liability – main counterparty), 2 (= joint liability – secondary counterparty)⁷

Joint liability amount (JNT_LBLTY_AMNT): a schematic representation is displayed in the following tables. Green parts refer to approach 1, whereas orange parts refer to approach 2.

COUNTERPARTIES

Counterparty identifier	Name	Institutional sector	Country
A
B
AB
.....

INSTRUMENT

Instrument unique ID	Currency	Purpose	Interest rate	Outstanding nominal amount
InsID1
InsID2
InsID3
.....

TRANSACTIONS-COUNTERPARTIES

Counterparty identifier	Transaction Identifier	Counterparty role in a transaction	Joint liability	Joint liability amount	.....
A	InsID1	Debtor	0 = no joint liability	0	.....
B	InsID2	Debtor	0 = no joint liability	0	.....
AB	InsID3	Debtor			.....
A	InsID3	Debtor	1 = main counterparty	.....	.....
B	InsID3	Debtor	2 = secondary counterparty	.....	.....
.....

JOINT LIABILITIES

Counterparty identifier	Joint counterparty component	Joint counterparty percentage
AB	A	.....
AB	B	.....
.....

3.3.5 Cubes required for the derivation of the enterprise size

3.3.5.1 Related counterparties

The counterparties listed in the *Counterparties* entity might have different kinds of relationships with other counterparties.

⁷ This variable is used to determine the counterparty's features (institutional sector, NACE, country, etc.) needed to classify the instrument. The possibility to classify the joint counterparty differently from its components cannot be handled in approach 2.

Three different entities show the different kinds of relationships:

CUBE_ID	DESCRIPTION	Main counterparty	Associated counterparty
JNT_CNTRPRTS	Joint counterparties	CNTRPRTY_ID	JNT_CNTRPRTY_CMPNNT
LNKD_ENTRPRSS	Linked enterprises	CNTRPRTY_ID	LNKD_ENTRPRSS_ID
PRTNR_ENTRPRSS	Partner enterprises	CNTRPRTY_ID	PRTNR_ENTRPRSS_ID
GRP	Group	CNTRPRTY_ID	LGL_ENTTY_ID

The main counterparty will be always represented in the counterparties main table (i.e. the cube *Counterparties*), while the associated counterparty may not necessarily be in the counterparties main table.

3.3.5.2 Group data

The group data entity includes information related to the groups just for the calculation of the enterprise size of the counterparty. The level of granularity of this entity is the group, uniquely identified by an internal ID.

CUBE_ID	DESCRIPTION
GRP_DT	Group data

3.3.5.3 Group counterparty relationship

The group counterparty relationship entity serves to relate group data to the counterparties for the calculation of the enterprise size.

CUBE_ID	DESCRIPTION
GRP_CNTRPRTY_RLTNSHP	Group counterparty relationship

3.3.6 Relationship between Transactions and Counterparties

The entity Transactions-Counterparties serves to link the counterparties and all types on transactions, when many-to-many relations are possible.

The level of granularity depends on four different variables. One counterparty may be part of many transactions, and one transaction may involve several counterparties. Besides that, for the same transaction, one counterparty may have different roles. The transaction ID is not unique (but instruments, credit facilities, credit transfer, and protection received have unique IDs at their respective level), therefore the type of transaction is required as part of the primary key.

CUBE_ID	DESCRIPTION
TRNSCTNS_CNTRPRTS	Transactions-Counterparties

For the cubes that refer to transactions in which one or more counterparties are involved, the relationship between them is generally described by the cube *Transactions-Counterparties* (*TRNSCTNS_CNTRPRTS*), which connects the *Transaction identifier* (*TRNSCTN_ID*) and the

Counterparty identifier (CNTRPRTY_ID) while specifying the *Counterparty role in a transaction (CNTRPRTY_RL)*. This cube applies to four types of transaction: loan/deposit, credit facility, protection and securitisation/transfer.

As regards the role of servicer, in case the instrument is serviced by the observed agent it is not necessary to put the link between the observed agent identifier and the *Instrument unique identifier* in the cube *Transactions-Counterparties*. In fact, this case is identified by the variable *Is serviced by the observed agent (IS_SRVCD_OBSRVD_AGNT)*, which is present in the structure of instrument cubes.

3.4 Collateral and guarantees (Protections and related entities)

3.4.1 Protections

The entity *Protections* includes all the items that may serve as protection received by the entity for risk mitigation purposes. The level of granularity is the protection item. Protections are represented using the following cubes, according to the nature of the protection:

CUBE_ID	DESCRIPTION
RL_ESTT_CLM	Real estate claim
RL_ESTT_PRTCTN_CLM	Real estate protection-Real estate claim
RL_ESTT_PRTCTN	Real estate protection
OTHR_PHYSCL_PRTCTN	Other physical protection
SCRTS_PRTCTN	Securities protection
PL_ITM	Pool of items
OTHR_FNNCL_PRTCTN	Other financial protection

In general the decomposition of protections into those cubes is due to the dependency of variables with respect to specific types of protection. For example, the variable *Type of protection (TYP_PRTCTN)* is present in all protection cubes but is restricted to a specific subdomain for each of those cubes. Another example is the variable *Security identifier (SCRTY_ID)* which is only meaningful for protections which represent securities and therefore is placed in the *Securities protection (SCRTS_PRTCTN)* cube.

We also distinguish between protection cubes related to real estate (i.e. *Real estate protection (RL_ESTT_PRTCTN)*, *Real estate claim (RL_ESTT_CLM)* and *Real estate protection-Real estate claim (RL_ESTT_PRTCTN_CLM)*) and protections not related to real estate. While protection cubes related to real estate are dependant to each other (i.e. a claim is always related to a real estate and vice-versa) the other cubes are independent to each other.

3.4.1.1 Securities protection (SCRTS_PRTCTN) & Registry table of securities (RGSTRY_TBL_SCRTS)

The cubes *Securities protection* and *Registry table of securities* comprise (reporting related) information about securities regardless the existence of an official ISIN. The cube *Registry table of securities'* purpose is to store the master data information about every security in the BIRD model. The *Securities protection* cube enables the usage of such a security as a protection in the BIRD model.

As one protection (identified by its *Protection identifier*) can only represent one security (identified by its *Security identifier*) while one *Security identifier* can represent multiple protections the relation between the *Protection identifier* and the *Security identifier* is of the type many-to-one.

3.4.1.2 Other financial protection (OTHR_FNNCL_PRTCTN)

The purpose of this cube is to represent financial protections which do not qualify as securities.

3.4.1.3 Other physical protection (OTHR_PHYSCL_PRTCTN)

This cube contains protections which represent physical protections but do not qualify as a real estate protection or claims on real estate. For example this cube comprises protections which can be classified as “Gold” or “Other physical collaterals”. The value “Other physical collaterals” (of the variable *Type of protection*) can be specified on a more granular level (for example “Motor vehicles” or “Aircraft collateral”) using the attribute *Subtype of protection (SBTYP_PRTCTN)*.

3.4.1.4 Pool of (repo) items (PL_ITM) in a reverse repurchase agreement

In case it is sufficient to report protections on a pool level this cube provides (i) the functionality to represent such pools in the BIRD model and (ii) additionally provides the (optional) functionality to store the composition of such a pool (if known to the reporting agent). Currently this functionality is only used for protection related to reverse repurchase agreements. The variable *Protection identifier (PRTCTN_ID)* represents this cube’s only dimension. It also contains the variable *Type of protection* which is restricted to the members “Debt securities”, “Shares”, “Other equity”, “Investment fund shares or units”, “Gold” and “Other physical protection”. Therefore the cube *Pool of items* is limited to pools representing either securities or physical protection.

The composition of such a pool can be established using the variable *Pool identifier (PL_ID)* in the cubes *Securities protection* or *Other physical protection*. The value of the variable *Pool identifier* in these cubes refers to the *Protection identifier* in the cube *Pool of items* which establishes the one-to-many relation between a pool and the underlying protections.

3.4.1.5 Real estate protection (RL_ESTT_PRTCTN), Real estate claim (RL_ESTT_CLM) and Real estate protection-Real estate claim (RL_ESTT_PRTCTN_CLM)

The cube *Real estate protection item* contains protections representing real estate while the cube *Real estate protection claim* contains claims related to such real estates. The many-to-many relation between such real estates and the claims on such real estates is managed by the cube *Real estate protection-Real estate claim*.

Therefore the cube *Real estate protection item* is – in opposition to the other protection cubes – not linked directly with the cube *Instruments-protections* but via the cube *Real estate protection claim*. As a consequence of this structure the values of the variables *Maturity date of the protection* and *Third party*

priority claims against the protection for a relation between an instrument and its real estate protection item are derived by the minimum and the maximum (of the intermediate claim) respectively.

Please also note that the identifier of the cube *Real estate protection* is the *Protection item identifier* (in contrast to the *Protection identifier* in the other protection cubes).

3.4.2 Instruments–Protections

This entity serves to link the protection received to the instruments it is protecting.

CUBE_ID	DESCRIPTION
INSTRMNTS_PRTCTNS	Instruments-protections

The cube *Instruments-protections* provides the BIRD model with the functionality to connect instruments and protections. Therefore the dimensions of this cube are the *Instrument unique identifier* (*INSTRMNT_UNQ_ID*) and the *Protection identifier* (*PRTCTN_ID*). As one instrument can be secured by multiple protections, while one protection can be pledged to multiple instruments the relation between instruments and protections is of the type *many-to-many*.

Additionally, this cube comprises variables which are connected to the instrument as well as the protection. For example the *Protection allocated value* (*PRTCTN_ALLCTD_VL*).

Protection allocated value

For banks this piece of information is a result of the allocation of collateral and guarantees on the instruments. At this stage, the BIRD does not manage this allocation. Consequently, the protection allocated value is an input variable *Protection allocated value* (*PRTCTN_ALLCTD_VL*), which is required in the cube *Instruments-protections*.

3.4.3 Specific cases

3.4.3.1 Reverse repurchase loans

The security bought in a reverse repurchase loan is considered as collateral. Similarly to securities pledged for other types of instrument, the cube *Securities protection* (*SCRTS_PRTCTN*) or *Pool of items* (*PL_ITM*) (in case of a pool) must be compiled.

3.4.3.2 Financial leases

The leased asset in a financial lease is considered as collateral. Similarly to collateral pledged for other types of instrument, the cube of the collateral pertinent to the nature of the leased asset must be compiled. At this stage, additional collateral covering a financial lease is not distinguished from the leased asset.

3.5 Credit quality

3.5.1 Legal sources

3.5.1.1 Default

Article 178 of Regulation (EU) No 575/2013 (Capital Requirements Regulation – CRR) defines the concept of “default of an obligor”, to be used in the context both of the IRB approach and of the standardised approach to credit risk (see article 127). The definition specifies that a default shall be considered to have occurred “when either or both of the following have taken place:

- a) the institution considers that the obligor is unlikely to pay its credit obligations to the institution, the parent undertaking or any of its subsidiaries in full, without recourse by the institution to actions such as realising security;
- b) the obligor is past due more than 90 days on any material credit obligation to the institution, the parent undertaking or any of its subsidiaries [...].”

The materiality threshold of a credit obligation past due is defined by the competent authorities and it reflects a level of risk that the competent authority considers to be reasonable. EBA has adopted draft regulatory technical standards on materiality threshold of credit obligation past due and it has submitted them to the European Commission. Their contents are not taken into consideration in the present analysis.

EBA has issued Guidelines on the application of the definition of default (EBA/GL/2016/07). They will apply from 1 January 2021, but EBA encourages institutions to implement the changes prior to this date in order to build the necessary time series.

3.5.1.2 Impaired

According to IFRS 9⁸, a financial asset is credit-impaired “when one or more events that have a detrimental impact on the estimated future cash flows of that financial asset have occurred. Evidence that a financial asset is credit-impaired include observable data about the following events:

- (a) significant financial difficulty of the issuer or the borrower;
- (b) a breach of contract, such as a default or past due event;
- (c) the lender(s) of the borrower, for economic or contractual reasons relating to the borrower’s financial difficulty, having granted to the borrower a concession(s) that the lender(s) would not otherwise consider;
- (d) it is becoming probable that the borrower will enter bankruptcy or other financial reorganisation;
- (e) the disappearance of an active market for that financial asset because of financial difficulties; or
- (f) the purchase or origination of a financial asset at a deep discount that reflects the incurred credit losses.”

⁸ IFRS 9 has been adopted by Commission Regulation (EU) 2016/2067.

3.5.1.3 Non-performing

Implementing Regulation (EU) No 680/2014 states (Annex V, Part 2, paragraph 29) that “non-performing exposures are those that satisfy any of the following criteria:

- (a) material exposures which are more than 90 days past due;
- (b) the debtor is assessed as unlikely to pay its credit obligations in full without realisation of collateral, regardless of the existence of any past-due amount or of the number of days past due.”

This categorisation “shall apply notwithstanding the classification of an exposure as defaulted for regulatory purposes in accordance with Article 178 of CRR or as impaired for accounting purposes”. “Exposures in respect of which a default is considered to have occurred in accordance with Article 178 CRR and exposures that have been found impaired in accordance with the applicable accounting framework shall always be considered as non-performing exposures.”

“Exposures shall be considered to have ceased being non-performing when all of the following conditions are met:

- (a) the exposure meets the exit criteria applied by the reporting institution for the discontinuation of the impairment and default classification;
- (b) the situation of the debtor has improved to the extent that full repayment, according to the original or when applicable the modified conditions, is likely to be made;
- (c) the debtor does not have any amount past-due by more than 90 days.

An exposure shall remain classified as non-performing while those conditions are not met, even though the exposure has already met the discontinuation criteria applied by the reporting institution for the impairment and default classification”.

“When forbearance measures are applied to non-performing exposures, then exposures shall be considered to have ceased being non-performing only when all the following conditions are met:

- (a) the application of forbearance measures does not lead to the recognition of impairment or default;
- (b) one year has passed since the forbearance measures were applied;⁹
- (c) there is not, following the forbearance measures, any past-due amount or concern regarding the full repayment of the exposure according to the post-forbearance conditions. The absence of concerns shall be determined after an analysis of the debtor’s financial situation by the institution. Concerns may be considered as no longer existing when the debtor has paid, via its regular payments in accordance with the post-forbearance conditions, a total equal to the amount that was previously past-due (where there were past-due amounts) or that has been written-off (where there were no past-due amounts) under the forbearance measures or the debtor has otherwise demonstrated its ability to comply with the post-forbearance conditions.”

⁹ EBA has clarified (Q&A 2015_2145) that, in case the exposure has been reclassified into “non-performing forborne category” after forbearance measures were applied, the one year probation period starts from the date of reclassification in non-performing forborne exposure.

3.5.1.4 Forbearance

Implementing Regulation (EU) No 680/2014 defines (Annex V, Part 2, paragraph 30) forbore exposures as “debt contracts in respect of which forbearance measures have been extended. Forbearance measures consist of concessions towards a debtor that is experiencing or about to experience difficulties in meeting its financial commitments (‘financial difficulties’).”

“A concession refers to either of the following actions:

- (a) a modification of the previous terms and conditions of a contract that the debtor is considered unable to comply with due to its financial difficulties (‘troubled debt’) resulting in insufficient debt service ability and that would not have been granted had the debtor not been experiencing financial difficulties;
- (b) a total or partial refinancing of a troubled debt contract, that would not have been granted had the debtor not been experiencing financial difficulties.

A concession may entail a loss for the lender.”

“Exposures shall be regarded as forbore where a concession has been made, irrespective of whether any amount is past-due or of the classification of the exposures as impaired in accordance with the applicable accounting framework or as defaulted in accordance with Article 178 of CRR. Exposures shall not be treated as forbore where the debtor is not in financial difficulties. Nevertheless the following shall be treated as forbearance measures:

- (a) a modified contract that has been classified as non-performing before the modification or would in the absence of modification be classified as non-performing;
- (b) the modification that has been made to a contract involves a total or partial cancellation by write-offs of the debt;
- (c) the institution approves the use of embedded forbearance clauses for a debtor who is non-performing or who would be considered as non-performing without the use of those clauses;
- (d) simultaneously with or close in time to the concession of additional debt by the institution, the debtor made payments of principal or interest on another contract with the institution that was non-performing or would in the absence of refinancing be classified as non-performing.”

“The classification as forbore shall be discontinued when all of the following conditions are met:

- (a) the contract is considered to be performing, including where it has been reclassified from the non-performing category after an analysis of the financial condition of the debtor showed that it no longer met the conditions to be considered as non-performing;
- (b) a minimum two year probation period has passed from the date the forbore exposure was considered to be performing;
- (c) regular payments of more than an insignificant aggregate amount of principal or interest have been made during at least half of the probation period;
- (d) none of the exposures to the debtor is more than 30 days past due at the end of the probation period.”

When these conditions “are not met at the end of the probation period, the exposure shall continue to be identified as performing forborne under probation until all the conditions are met. The conditions shall be assessed on at least a quarterly basis.”

“A forborne exposure may be considered as performing from the date the forbearance measures were applied where either of the following conditions is met:

- (a) that extension has not led the exposure to be classified as non-performing;
- (b) the exposure was not considered to be a non-performing exposure at the date the forbearance measures were extended.”

Where additional forbearance measures are applied to a performing forborne contract under probation or it becomes more than 30 days past due, it shall be classified as non-performing.

3.5.2 Information in the input layer

3.5.2.1 Credit quality status

As they have relevant overlapping areas, the two definitions of “non-performing” and “default” have been managed with a single input variable named *Credit quality status (CRDT_QLTY_STTS)*. It is present in the cube *Counterparties* and in the cubes of instruments. It may assume the following values:

0 = not applicable;

11 = performing;

19 = default because unlikely to pay;

20 = default because more than 90/180 days past due;

18 = default because both unlikely to pay and more than 90/180 days past due;

2 = non-performing but not in default.

The accounting concept of “impaired” is identified in a different way as it corresponds to the value “Stage 3 (IFRS)” of the variable *Impairment status (IMPRMNT_STTS)*. Such value is normally associated with one of the values related to default of the above variable, but in some particular cases it can refer to the status of non-performing but not in default.

PERFORMING

Implementing Regulation (EU) No 680/2014 has to be followed.

DEFAULT BECAUSE UNLIKELY TO PAY

The criteria described in Article 178 of CRR have to be followed. In particular, paragraph 3 of art.178 contains some elements to be taken as indications of unlikeliness to pay.

EBA’s Guidelines (EBA/GL/2016/07) provide clarification regarding the application of each indication of unlikeliness to pay (see paragraph 5).

DEFAULT BECAUSE MORE THAN 90/180 DAYS PAST DUE

The criteria described in Article 178 of CRR have to be followed. In particular, paragraph 2 of art.178 gives some specifications regarding how to apply the definition of past due.

However, various approaches have been adopted across institutions and jurisdictions¹⁰. EBA Guidelines (EBA/GL/2016/07 see paragraph 4) clarify some aspects regarding the counting of days past due, the technical past due situation, the exposures to central governments, local authorities and public sector entities, factoring and trade receivables and the materiality threshold. Further and more specific indications on the materiality threshold are contained in the related RTS.

DEFAULT BECAUSE BOTH UNLIKELY TO PAY AND MORE THAN 90/180 PAST DUE

The criteria described in Article 178 of CRR have to be followed. This value has to be provided when both the conditions have taken place.

NON-PERFORMING BUT NOT IN DEFAULT

This value can be used when an exposure is treated as credit-impaired under IFRS 9, but it does not meet the definition of default¹¹.

This value can also be used for cases in which the obligor has not met the conditions to cease being non-performing while it meets the exit criteria for the discontinuation of default classification.

In the case of retail exposures the CRR states that institutions may apply the definition of default at the level of an individual credit facility rather than in relation to the total obligations of a borrower. Similarly, paragraph 154 of Implementing Regulation (EU) No 680/2014 says that exposures shall be assessed as non-performing on an individual basis (“transaction approach”) or by considering the overall exposure to a given debtor (“debtor approach”).

The input variable *Assessment approach for credit quality status (APPRCH_CRDT_QLTY_STTS)*, which is present in the cubes of instruments, indicates the approach chosen by the institution. It may assume the following values:

- 1 = debtor based;
- 2 = transaction based.

Institutions should choose the level of application of the definition of default between obligor and facility for all retail exposures in a way that reflects their internal risk management practices. Where institutions decide to use different levels of application of the definition of default for different types of retail exposures it may happen that some exposures of an obligor are assessed at the individual facility level while others at obligor level. This is the reason why such input variable has to be provided at the level of instruments and not of the counterparty.

The approach may be transaction based only if the input variable *Is retail exposure (IS_RTL_EXPSR)* is equal to “true”. If all the retail exposures of a counterparty are assessed according to the transaction

¹⁰ Inter alia, according to Article 178 (1) (b) of the CRR, “competent authorities may replace the 90 days with 180 days for exposures secured by residential property or SME commercial immovable property in the retail exposure class, as well as exposures to public sector entities. The 180 days shall not apply for the purposes of Article 127”, which regards the standardised approach to credit risk.

¹¹ EBA’s Guidelines state that “where the institution treats an exposure as credit-impaired under IFRS 9, i.e. assigns it to Stage 3 as defined in IFRS 9 Financial Instruments, published by the IASB in July 2014, such exposure should be considered defaulted, except where the exposure has been considered credit-impaired due to the delay in payment and either or both of the following conditions are met:

- (a) the competent authorities have replaced the 90 days past due with 180 days past due in accordance with point (b) of Article 178(1) of Regulation EU (No) 575/2013 and this longer period is not used for the purpose of recognition of credit-impairment;
- (b) the materiality threshold referred to in Article 178(2)(d) of Regulation (EU) No 575/2013 has not been breached;
- (c) the exposure has been recognised as a technical past due situation in accordance with paragraph 23;
- (d) the exposure meets the conditions of paragraph 25.” [exposures to central governments, local authorities and public sector entities with specific treatment].

based approach, then the *Credit quality status* in the cube *Counterparties* must be “not applicable”. On the contrary, if this approach is used only for a subset of exposures extended to a counterparty, then the credit quality status is assessed both at instrument and at counterparty level¹². In such a case the default status of the counterparty is subject to AnaCredit reporting.

Different treatment should be followed for counterparties that are issuers of securities. The information on default has to be reported at issuer level and not at security level, for this reason the variable *Assessment approach for credit quality status (APPRCH_CRDT_QLTY_STTS)* is not included in the cube owned security (OWND_SCRTY) and the default status has to be provided in the counterparty cube (CNTRPRTS).

When a credit quality status is provided, the *Date of default status (DT_DFLT_STTS)*, for counterparties and instruments, and the *Date of performing status (DT_PRRFMNG_STTS)*, for instruments, have to be provided too. The two dates refer to the latest changes of the default/performing status and they may not be later than the reporting reference date. For example, if a bank uses the transaction approach to assess a retail exposure and the credit quality status changes from “default because more than 90/180 days past due” to “non-performing but not in default”, the reporting agent has to keep track of the date in which this reclassification has occurred (*Date of default status*) but it does not have to modify the *Date of performing status* because the instrument is still non-performing. Changes between default status (e.g. from “default because unlikely to pay” to “default because more than 90/180 days past due”) do not trigger changes in the date of default status, which is the date when the instrument or the obligor entered or exited the default status for the last time.

For instruments that have been performing (or not in default) since the inception, the inception date of the instrument must be used. With regard to counterparties, if no default is considered to have occurred prior to the reporting reference date, then the date of default status should be 31/12/2099.

In case of debtor approach the date of performing status of all instruments of the same debtor treated under such approach should be the date on which the outcome of the assessment of the debtor has switched from “performing” to “non-performing” and vice versa. However, in case of a debtor considered as “performing”, for those instruments considered as “non-performing” since they are impaired the date of performing status should be the date on which the instrument has been classified as “Stage 3 (IFRS)”.

In case of counterparties which are protection providers – for which the default status of the counterparty is subject to reporting - which do not have any credit obligation to a given observed agent (i.e. they are not debtors vis-à-vis an observed agent) and which are not classified in default in accordance with Article 178 of CRR, the credit quality status is “performing” and the date of default status is “not applicable”.

Where an institution has on-balance sheet exposures to a debtor that are past due by more than 90 days and the gross carrying amount of the past due exposures represents more than 20% of the gross carrying amount of all on-balance sheet exposures to that debtor, all on- and off-balance sheet exposures to that debtor shall be considered as non-performing (Annex V of Implementing Regulation (EU) No 680/2014). If this is the case the pulling effect applies. In order to identify this case, the variable

¹² EBA's Guidelines state that “where the exposure to which the definition of default at the obligor level applies fulfils either or both of the conditions of points (a) or (b) of Article 178(1) of Regulation (EU) No 575/2013, then all exposures to that obligor should be considered defaulted, including those subject to the application of the definition of default at individual credit facility level. Where the exposure subject to the application of the definition of default at individual credit facility level meets those conditions, the other exposures to the obligor should not be automatically reclassified to default status. Institutions, however, may classify those other exposures as defaulted on the basis of other unlikelihood to pay considerations”.

Is pulling effect (*IS_PLLNG_EFFCT*) is present in the cube *Counterparties* and it may assume the following values:

F = false;

T = true.

Specific instructions to feed the input layer are provided below, with reference to some examples described in the Part II of the AnaCredit Manual.

Example 1 illustrates the reporting in the case of 'transaction based' assessment in line with paragraph 154 of Annex V to the ITS applying the definition of default at the level of an individual instrument in line with Article 178(1) of the CRR.

BIRD INPUT						ANACREDIT OUTPUT			
INSTRUMENT IDENTIFIER	CREDIT QUALITY STATUS	DATE OF DEFAULT STATUS	DATE OF PERFORMING STATUS	ASSESSMENT APPROACH FOR CREDIT QUALITY STATUS	IS RETAIL EXPOSURE	DEFAULT STATUS	DATE OF DEFAULT STATUS	PERFORMING STATUS	DATE OF PERFORMING STATUS
INS#1	NON-PERFORMING BUT NOT IN DEFAULT	31/12/2017	12/09/2019	TRANSACTION BASED	TRUE	NOT IN DEFAULT	31/12/2017	NON-PERFORMING	12/09/2019
INS#2	DEFAULT BECAUSE MORE THAN 90/180 DAYS PAST DUE	20/09/2019	20/09/2019	TRANSACTION BASED	TRUE	DEFAULT BECAUSE MORE THAN 90/180 DAYS PAST DUE	20/09/2019	NON-PERFORMING	20/09/2019
COUNTERPARTY IDENTIFIER	CREDIT QUALITY STATUS	DATE OF DEFAULT STATUS	IS PULLING EFFECT			DEFAULT STATUS	DATE OF DEFAULT STATUS		
DEB#1	NOT APPLICABLE	-	FALSE			-	-		

Example 2 illustrates the reporting in the case of 'debtor based' assessment in line with paragraph 154 of Annex V to the ITS applying the definition of default at the level of a debtor.

BIRD INPUT						ANACREDIT OUTPUT			
INSTRUMENT IDENTIFIER	CREDIT QUALITY STATUS	DATE OF DEFAULT STATUS	DATE OF PERFORMING STATUS	ASSESSMENT APPROACH FOR CREDIT QUALITY STATUS	IS RETAIL EXPOSURE	DEFAULT STATUS	DATE OF DEFAULT STATUS	PERFORMING STATUS	DATE OF PERFORMING STATUS
INS#1	NOT APPLICABLE	-	20/09/2019	DEBTOR BASED	TRUE	NOT APPLICABLE	NOT APPLICABLE	NON-PERFORMING	20/09/2019
INS#2	NOT APPLICABLE	-	20/09/2019	DEBTOR BASED	TRUE	NOT APPLICABLE	NOT APPLICABLE	NON-PERFORMING	20/09/2019
COUNTERPARTY IDENTIFIER	CREDIT QUALITY STATUS	DATE OF DEFAULT STATUS	IS PULLING EFFECT			DEFAULT STATUS	DATE OF DEFAULT STATUS		
DEB#1	DEFAULT BECAUSE MORE THAN 90/180 DAYS PAST DUE	20/09/2019	FALSE			DEFAULT BECAUSE MORE THAN 90/180 DAYS PAST DUE	20/09/2019		

Example 3 illustrates the reporting in the case of non-retail exposures applying the definition of default at the level of a debtor.

INSTRUMENT IDENTIFIER	BIRD INPUT					ANACREDIT OUTPUT			
	CREDIT QUALITY STATUS	DATE OF DEFAULT STATUS	DATE OF PERFORMING STATUS	ASSESSMENT APPROACH FOR CREDIT QUALITY STATUS	IS RETAIL EXPOSURE	DEFAULT STATUS	DATE OF DEFAULT STATUS	PERFORMING STATUS	DATE OF PERFORMING STATUS
INS#1	NOT APPLICABLE	-	11/05/2018	DEBTOR BASED	FALSE	NOT APPLICABLE	NOT APPLICABLE	PERFORMING	11/05/2018
INS#2	NOT APPLICABLE	-	15/09/2019	DEBTOR BASED	FALSE	NOT APPLICABLE	NOT APPLICABLE	NON-PERFORMING	15/09/2019
INS#3	NOT APPLICABLE	-	21/01/2019	DEBTOR BASED	FALSE	NOT APPLICABLE	NOT APPLICABLE	PERFORMING	21/01/2019
COUNTERPARTY IDENTIFIER	CREDIT QUALITY STATUS	DATE OF DEFAULT STATUS	IS PULLING EFFECT			DEFAULT STATUS	DATE OF DEFAULT STATUS		
DEB#1	PERFORMING	31/12/2099	FALSE			NOT IN DEFAULT	NOT APPLICABLE		
DEB#2	DEFAULT BECAUSE UNLIKELY TO PAY	15/09/2019	FALSE			DEFAULT BECAUSE UNLIKELY TO PAY	15/09/2019		
DEB#3	PERFORMING	31/12/2099	FALSE			NOT IN DEFAULT	NOT APPLICABLE		

Example 4 illustrates the reporting in the case of ‘transaction based’ assessment in line with paragraph 154 of Annex V to the ITS applying the definition of default at the level of an individual credit facility in line with Article 178(1) of the CRR.

INSTRUMENT IDENTIFIER	BIRD INPUT					ANACREDIT OUTPUT			
	CREDIT QUALITY STATUS	DATE OF DEFAULT STATUS	DATE OF PERFORMING STATUS	ASSESSMENT APPROACH FOR CREDIT QUALITY STATUS	IS RETAIL EXPOSURE	DEFAULT STATUS	DATE OF DEFAULT STATUS	PERFORMING STATUS	DATE OF PERFORMING STATUS
INS#1	NON-PERFORMING BUT NOT IN DEFAULT	29/03/2018	20/09/2019	TRANSACTION BASED	TRUE	NOT IN DEFAULT	29/03/2018	NON-PERFORMING	20/09/2019
INS#2	DEFAULT BECAUSE MORE THAN 90/180 DAYS PAST DUE	20/09/2019	20/09/2019	TRANSACTION BASED	TRUE	DEFAULT BECAUSE MORE THAN 90/180 DAYS PAST DUE	20/09/2019	NON-PERFORMING	20/09/2019
COUNTERPARTY IDENTIFIER	CREDIT QUALITY STATUS	DATE OF DEFAULT STATUS	IS PULLING EFFECT			DEFAULT STATUS	DATE OF DEFAULT STATUS		
DEB#1	NOT APPLICABLE	-	TRUE			NOT APPLICABLE	NOT APPLICABLE		

Example 5: reporting the default status of the counterparty.

Reference date: 31/03/2019									
BIRD INPUT						ANACREDIT OUTPUT			
INSTRUMENT IDENTIFIER	CREDIT QUALITY STATUS	DATE OF DEFAULT STATUS	DATE OF PERFORMING STATUS	ASSESSMENT APPROACH FOR CREDIT QUALITY STATUS	IS RETAIL EXPOSURE	DEFAULT STATUS	DATE OF DEFAULT STATUS	PERFORMING STATUS	DATE OF PERFORMING STATUS
LOAN#1	NOT APPLICABLE	-	31/12/2017	DEBTOR BASED	FALSE	NOT APPLICABLE	NOT APPLICABLE	PERFORMING	31/12/2017
COUNTERPARTY IDENTIFIER	CREDIT QUALITY STATUS	DATE OF DEFAULT STATUS	IS PULLING EFFECT			DEFAULT STATUS	DATE OF DEFAULT STATUS		
DEB#1	PERFORMING	-	FALSE			NOT IN DEFAULT	NOT APPLICABLE		
GAR#T	PERFORMING	-	FALSE			NOT IN DEFAULT	NOT APPLICABLE		
Reference date: 30/09/2019									
BIRD INPUT						ANACREDIT OUTPUT			
INSTRUMENT IDENTIFIER	CREDIT QUALITY STATUS	DATE OF DEFAULT STATUS	DATE OF PERFORMING STATUS	ASSESSMENT APPROACH FOR CREDIT QUALITY STATUS	IS RETAIL EXPOSURE	DEFAULT STATUS	DATE OF DEFAULT STATUS	PERFORMING STATUS	DATE OF PERFORMING STATUS
LOAN#1	DEFAULT BECAUSE UNLIKELY TO PAY	-	15/09/2019	DEBTOR BASED	FALSE	NOT APPLICABLE	NOT APPLICABLE	NON-PERFORMING	15/09/2019
COUNTERPARTY IDENTIFIER	CREDIT QUALITY STATUS	DATE OF DEFAULT STATUS	IS PULLING EFFECT			DEFAULT STATUS	DATE OF DEFAULT STATUS		
DEB#1	DEFAULT BECAUSE UNLIKELY TO PAY	15/09/2019	FALSE			DEFAULT BECAUSE UNLIKELY TO PAY	15/09/2019		
GAR#T	PERFORMING	-	FALSE			NOT IN DEFAULT	NOT APPLICABLE		
Reference date: 31/01/2020									
BIRD INPUT						ANACREDIT OUTPUT			
INSTRUMENT IDENTIFIER	CREDIT QUALITY STATUS	DATE OF DEFAULT STATUS	DATE OF PERFORMING STATUS	ASSESSMENT APPROACH FOR CREDIT QUALITY STATUS	IS RETAIL EXPOSURE	DEFAULT STATUS	DATE OF DEFAULT STATUS	PERFORMING STATUS	DATE OF PERFORMING STATUS
LOAN#1	DEFAULT BECAUSE UNLIKELY TO PAY	-	15/09/2019	DEBTOR BASED	FALSE	NOT APPLICABLE	NOT APPLICABLE	NON-PERFORMING	15/09/2019
COUNTERPARTY IDENTIFIER	CREDIT QUALITY STATUS	DATE OF DEFAULT STATUS	IS PULLING EFFECT			DEFAULT STATUS	DATE OF DEFAULT STATUS		
DEB#1	DEFAULT BECAUSE UNLIKELY TO PAY	15/09/2019	FALSE			DEFAULT BECAUSE UNLIKELY TO PAY	15/09/2019		
GAR#T	DEFAULT BECAUSE MORE THAN 90/180 DAYS PAST DUE	24/01/2020	FALSE			DEFAULT BECAUSE MORE THAN 90/180 DAYS PAST DUE	24/01/2020		

3.5.2.2 Forbearance and renegotiation

Modifications of the instrument's terms and conditions are captured by the input variable *Forbearance and renegotiation status (FRBRNC_STTS)*. It is present in the cubes of instruments and it may assume the following values:

4 = forbore: instruments with modified interest rate below market conditions;

- 5 = forbore: instruments with other modified terms and conditions;
- 3 = forbore: totally or partially refinanced debt;
- 9 = renegotiated instrument without forbearance measures;
- 8 = not forbore or renegotiated.

For the definition of the members see the same name variable in AnaCredit Regulation, which in turn refers to Implementing Regulation (EU) No 680/2014 for what concerns the definition of forbearance measures (see above paragraph 4.9.1.4). In particular, banks can refer to Annex V, Part 2.164, point (a), for values 4 and 5 and to point (b) for value 3. As regards value 9, the AnaCredit Manual states that it must be used "if any material element of a revolving instrument is changed for reasons other than forbearance [...] renegotiation of the interest rate (or spread) in response to a lower rate offered by other banks is considered as a sufficient reason [...] for such a qualification".

The input variable *Date of the forbearance and renegotiation status (DT_FRBRNC_STTS)* has to be filled in with the date on which the current status of forbearance and renegotiation is considered to have occurred.

Specific instructions to feed the input layer are provided below, with reference to an example described in the Part II of the AnaCredit Manual.

Example 6: status of forbearance or renegotiation and the corresponding date.

Reference date: 31/03/2018								
BIRD INPUT					ANACREDIT OUTPUT			
INSTRUMENT IDENTIFIER	CREDIT QUALITY STATUS	DATE OF PERFORMING STATUS	FORBEARANCE AND RENEGOTIATION STATUS	DATE OF THE FORBEARANCE AND RENEGOTIATION STATUS	PERFORMING STATUS	DATE OF PERFORMING STATUS	FORBEARANCE AND RENEGOTIATION STATUS	DATE OF THE FORBEARANCE AND RENEGOTIATION STATUS
INS#1	PERFORMING	04/02/2017	RENEGOTIATED INSTRUMENT WITHOUT FORBEARANCE MEASURES	15/03/2018	PERFORMING	04/02/2017	RENEGOTIATED INSTRUMENT WITHOUT FORBEARANCE MEASURES	15/03/2018
Reference date: 30/06/2018								
BIRD INPUT					ANACREDIT OUTPUT			
INSTRUMENT IDENTIFIER	CREDIT QUALITY STATUS	DATE OF PERFORMING STATUS	FORBEARANCE AND RENEGOTIATION STATUS	DATE OF THE FORBEARANCE AND RENEGOTIATION STATUS	PERFORMING STATUS	DATE OF PERFORMING STATUS	FORBEARANCE AND RENEGOTIATION STATUS	DATE OF THE FORBEARANCE AND RENEGOTIATION STATUS
INS#1	PERFORMING	04/02/2017	RENEGOTIATED INSTRUMENT WITHOUT FORBEARANCE MEASURES	15/03/2018	PERFORMING	04/02/2017	RENEGOTIATED INSTRUMENT WITHOUT FORBEARANCE MEASURES	15/03/2018
Reference date: 30/09/2018								
BIRD INPUT					ANACREDIT OUTPUT			
INSTRUMENT IDENTIFIER	CREDIT QUALITY STATUS	DATE OF PERFORMING STATUS	FORBEARANCE AND RENEGOTIATION STATUS	DATE OF THE FORBEARANCE AND RENEGOTIATION STATUS	PERFORMING STATUS	DATE OF PERFORMING STATUS	FORBEARANCE AND RENEGOTIATION STATUS	DATE OF THE FORBEARANCE AND RENEGOTIATION STATUS
INS#1	DEFAULT BECAUSE UNLIKELY TO PAY	10/08/2018	FORBORNE: INSTRUMENTS WITH MODIFIED INTEREST RATE BELOW MARKET CONDITIONS	10/08/2018	NON-PERFORMING	10/08/2018	FORBORNE: INSTRUMENTS WITH MODIFIED INTEREST RATE BELOW MARKET CONDITIONS	10/08/2018
Reference date: 30/09/2019								
BIRD INPUT					ANACREDIT OUTPUT			
INSTRUMENT IDENTIFIER	CREDIT QUALITY STATUS	DATE OF PERFORMING STATUS	FORBEARANCE AND RENEGOTIATION STATUS	DATE OF THE FORBEARANCE AND RENEGOTIATION STATUS	PERFORMING STATUS	DATE OF PERFORMING STATUS	FORBEARANCE AND RENEGOTIATION STATUS	DATE OF THE FORBEARANCE AND RENEGOTIATION STATUS
INS#1	PERFORMING	10/08/2019	FORBORNE: INSTRUMENTS WITH MODIFIED INTEREST RATE BELOW MARKET CONDITIONS	10/08/2018	PERFORMING	10/08/2019	FORBORNE: INSTRUMENTS WITH MODIFIED INTEREST RATE BELOW MARKET CONDITIONS	10/08/2018
Reference date: 30/09/2021								
BIRD INPUT					ANACREDIT OUTPUT			
INSTRUMENT IDENTIFIER	CREDIT QUALITY STATUS	DATE OF PERFORMING STATUS	FORBEARANCE AND RENEGOTIATION STATUS	DATE OF THE FORBEARANCE AND RENEGOTIATION STATUS	PERFORMING STATUS	DATE OF PERFORMING STATUS	FORBEARANCE AND RENEGOTIATION STATUS	DATE OF THE FORBEARANCE AND RENEGOTIATION STATUS
INS#1	PERFORMING	10/08/2019	NOT FORBORNE OR RENEGOTIATED	10/08/2021	PERFORMING	10/08/2019	NOT FORBORNE OR RENEGOTIATED	10/08/2021

3.5.2.3 Other

Banks adopting IRB approaches for the calculation of the risk-weighted exposure amounts for credit risk have to provide the variable *Probability of default (PD)* in the cube *Counterparties*, only for debtors and those protection providers which are at the same time the issuers of the protection (in particular, if the protection item is a financial guarantee as defined in the Implementing Regulation (EU) No 680/2014). The PD is determined in accordance with the CRR and it is a number from 0 to 1.

In order to check the presence of the PD, institutions are required to provide the input variable *Approach for prudential purposes (APPRCH_PRDNTL_PRPSS)* in the cube *Counterparties*. It may assume the following values:

- 0 = not applicable;
- 42 = standardised approach;
- 66 = advanced IRB;
- 67 = foundation IRB.

This variable must be compiled in accordance with the CRR. In particular, Article 107 states that “institutions shall apply either the Standardised Approach provided for in Chapter 2 or, if permitted by the competent authorities in accordance with Article 143, the Internal Ratings Based Approach provided for in Chapter 3 to calculate their risk-weighted exposure amounts for the purposes of points (a) and (f) of Article 92(3)”.

3.6 Prudential information

Some prudential data related to securities held are required. They are used in the transformation rule that calculates the variables *Exposure class (EXPSR_CLSS)* and *Risk weight (RSK_WGHT)* (see paragraph 6.3).

Cube “Owned securities” (OWND_SCRTY)

Capital calculation approach for prudential purposes (APPRCH_PRDNTL_PRPSS)

Identification of the approach used to calculate the risk-weighted exposure amounts for the purposes of points (a) and (f) of article 92(3) of CRR.

- 0 = not applicable;
- 42 = standardised approach;
- 66 = advanced IRB;
- 67 = foundation IRB.

Exposure class (input) (EXPSR_CLSS_INPT)

Exposure class provided directly by the bank as input information.

The domain comprises the IRB exposure classes.

It has to be provided when the internal ratings based (IRB) approach is followed.

Prudential portfolio (PRDNTL_PRTFL)

Classification of exposures in the trading book as defined in Article 4(1)(86) of CRR.

0 = not applicable;

1 = trading book;

2 = non-trading book.

Is equity with 250% risk weight (IS_EQTY_250_RSK_WGHT)

It identifies investments in equity attracting a 250% risk weight under Article 48(4) of CRR.

F = false;

T = true.

Risk weight (input) (RSK_WGHT_INPT)

Risk weight provided directly by the bank as input information.

It may be provided when the internal ratings based (IRB) approach is followed, if it can be calculated via IRB parameters.

Specific risk weight (SPCFC_RSK_WGHT)

It has to be provided when a specific risk weight, which is not derived from other input information, is applied¹³. In particular, it covers the following cases:

- exposures to Member States' central governments, and central banks denominated and funded in the domestic currency of that central government and central bank (Article 114, Paragraph 4, of CRR), if that currency is not the domestic currency of the owner;
- exposures to the central governments or central banks of Member States denominated and funded in the domestic currency of any other Member State (Article 495, Paragraph 2, of CRR, as recalled by Article 114, Paragraph 6);
- exposures to central governments or central banks referred to in Article 114, Paragraph 7, of CRR;
- exposures to regional governments or local authorities to be treated as exposures to the central government in whose jurisdiction they are established (Article 115, Paragraph 2, of CRR), when for that central government a specific risk weight has to be provided;
- exposures to regional governments or local authorities referred to in Article 115, Paragraph 4, of CRR;
- exposures to regional governments or local authorities of the Member States denominated and funded in the domestic currency of that regional government or local authority (Article 115, Paragraph 5, of CRR), if that currency is not the domestic currency of the owner;
- exposures to public sector entities to be treated as exposures to the central government, regional government or local authority in whose jurisdiction they are established (Article 116, Paragraph 4, of CRR), when for that central government, regional government or local authority a specific risk weight has to be provided;
- exposures to public sector entities referred to in Article 116, Paragraph 5, of CRR;
- exposures to institutions referred to in Article 119, Paragraph 2, of CRR, except the case in which the institution is resident in a Member State, the exposure is denominated in the domestic currency of that institution and that currency is the domestic currency of the owner;

¹³ The absence of the variable (value "null") must be distinguished from the value "0".

- exposures in the form of units or shares in collective investment undertakings, when the bank applies the look-through approach or the average risk weight approach (Article 132, Paragraphs 3-5, of CRR).

Is qualifying holding with 1250% risk weight (IS_QLFY_HLD_1250_RSK_WGHT)

It identifies qualifying holdings for which a 1250% risk weight is applied under Article 89(3) of CRR.

F = false;

T = true.

Is equity holding with 370% risk weight (IS_EQTY_HLD_370_RSK_WGHT)

It identifies equity holdings in insurance undertakings, reinsurance undertakings and insurance holding companies risk weighted at 370% under Article 471 of CRR.

F = false;

T = true.

Cube “Registry table of securities” (RGSTRY_TBL_SCRTS)

Is particular high risk (IS_PRTCLR_HGH_RSK)

It identifies items associated with particular high risk under Article 128 of CRR.

F = false;

T = true.

Is covered bond (IS_CVRD_BND)

It identifies covered bonds under Article 129 of CRR.

F = false;

T = true.

External credit assessment (EXTRNL_CRDT_ASSSSMNT)

It has to be provided only if it is used to calculate the capital requirements for credit risk according to CRR. The criteria of Part three, Title II, Chapter 2, Sections 3 and 4 of CRR have to be applied.

Cube “Counterparties” (CNTRPRTS)

Characteristics for credit risk (CHRCTRSTCS_CRDT_RSK)

0 = not applicable;

1 = financial corporation to which the exposures are treated as exposures to institutions; it refers to: a) credit institutions and investment firms (Article 4(1)(3) of CRR) resident in the Union; b) qualifying central counterparties (Article 107(2)(a) of CRR) resident in the Union; c) institutions of third countries that apply prudential supervisory and regulatory requirements at least equivalent to those applied in the Union (see Commission Implementing Decision of 12 December 2014 (2014/908/EU) according to Article 107(4) of CRR); d) financial institutions authorised and supervised by the competent authorities and subject to prudential requirements comparable to those applied to institutions in terms of robustness (Article 119(5) CRR);

2 = credit institutions, central, state and local government to be classified as public sector entity under Article 4(1)(8) of CRR;

3 = central, state and local government that is a corporate under Article 122 of CRR.

Is same institutional protection scheme (IS_SM_PRTCTN_SCHM)

It identifies the counterparties with which the institution has entered into an institutional protection scheme, as referred to in Article 113, Paragraph 7 of CRR.

0 = not applicable;

F = false;

T = true.

Is regional government or local authority treated as central government (IS_CNTRL_GVRNMNT_TRTD_LG)

It identifies regional governments and local authorities to be treated as central government (Article 115(2) of CRR).

0 = not applicable;

F = false;

T = true.

Is public sector entity treated as central government (IS_CNTRL_GVRNMNT_TRTD_PS)

It identifies public sector entities to be treated as central government (Article 116(4) of CRR).

0 = not applicable;

F = false;

T = true.

Is public sector entity treated as regional government or local authority (IS_LCL_GVRNMNT_TRTD_PS)

It identifies public sector entities to be treated as regional government or local authority (Article 116(4) of CRR).

0 = not applicable;

F = false;

T = true.

Cube “External credit assessments” (EXTRNL_CRDT_ASSSSMNT)

External credit assessment (EXTRNL_CRDT_ASSSSMNT)

The institution ensures that each value of this variable is unique.

Credit quality step (CRDT_QLTY_STP)

For ECAI it is the credit quality step used in the standardised approach to capital requirements for credit risk (Part three, Title II, Chapter 2 of CRR). A value from 1 to 6 has to be provided, in accordance with Commission Implementing Regulation (EU) 2016/1799.

For ECA it is the minimum export insurance premium that the OECD agreed methodology establishes (see Article 137 of CRR). A value from 0 to 7 has to be provided.

ECAI/ECA (ECAI_ECA)

It distinguishes external credit assessments given by an ECAI, as defined by the CRR (Article 4(1)(98)), from those given by an Export Credit Agency (ECA).

0 = not applicable;

1 = ECAI;

2 = ECA.

Is short-term credit assessment (IS_SHRT_TRM_CRDT_ASSSSMNT)

It identifies short-term credit assessments under Article 140 of CRR.

F = false;

T = true.

Cube “Parameters” (PRMTR)

Derogation for small trading book business (DRGTN_SMLL_TRDNG_BK_BSNESS)

It indicates whether the institution has got the derogation of Part three, Title I, Chapter 1, Section 1, Article 94 of CRR.

F = false;

T = true.

Cube “Countries” (CNTR)

Country (CNTRY)

ISO 3166-1 alpha-2 code of the country.

Currency (CRRNCY)

Is Member State (IS_MMBR_STT)

For the definition see EBA Single Rulebook Q&A 2013_233.

F = false;

T = true.

External credit assessment (EXTRNL_CRDT_ASSSSMNT)

It has to be provided only if it is used to calculate the capital requirements for credit risk according to CRR. The criteria of Part three, Title II, Chapter 2, Sections 3 and 4 of CRR have to be applied.

In this cube it refers to the credit assessment assigned to the central government.

3.7 Other cubes

3.7.1 Parameters

This entity serves to introduce parameters necessary for generating the output information from the input. They are not linked to other entities.

CUBE_ID	DESCRIPTION
PRMTR	Parameters

The cube Parameters (PRMTR) contains parameters that the institution processing the data has to provide and that will be used in BIRD transformation rules.

In particular the cube describes, among other things:

- The accounting framework for solo reporting.
- If the joint liability is registered as a distinct counterparty or it is not.
- If the carrying amount is derived following the BIRD rules or if it is provided as an input.
- If the reporting agent is subject to capital requirements.
- The frame of reference, at which level the data are processed (group, solo, etc.).
- The identifier of the institution that processes the data.

3.7.2 Group

The group entity includes information related to the group composition and relevant attributes like consolidation scope and percentage of consolidation.

CUBE_ID	DESCRIPTION
GRP	Group

The variable percentage of consolidation (PRCNTG_CNSLDTN) should be provided just in case of partial consolidation. The rest of the variables of the group should be always provided.

3.7.3 Legal entity composition

CUBE_ID	DESCRIPTION
CMPSTN_LGL_ENTTY	Composition of legal entity

the cube describes the structure of each legal entity in term of head office and foreign branches.

4 Validation rules

This chapter describes the quality checks implemented for the BIRD input cubes.

The quality checks are mainly related to the consistency among value reported in different variables that have specific relationships (consistency checks) and checks related to the absence of values in different cubes. The absence check is able to identify the case in which the absence of a specific value is admitted because of the nature of the variable or because the information is not requested by regulation (e.g. Annex II and III of the AnaCredit regulation).

The checks are described, also in non-formal language, in the BIRD DB, transformation cube. The validation rules can be identified by the SCHEME_ID with a V as starting letter.

5 Derivation rules

5.1 Derivation of “Enterprise size”

5.1.1 Introduction

The AnaCredit regulation defines the variable *Enterprise size* (*ENTRPRS_SZ*) in accordance with the Annex to Commission Recommendation 2003/361/EC¹⁴.

The bank may decide, counterparty by counterparty, to feed this piece of information directly in the input or to execute the transformation rule “Derivation of “Enterprise size” (see the BIRD database SCHEME_ID = D_ENTRPRS_SZ_CLCLTD1).

Input data needed to calculate the enterprise size comprise:

- the date to which the calculation refers (see article 4, paragraphs 1 and 3);
- information concerning the staff headcount and financial ceilings (see article 2);
- the type of enterprise (see article 3);
- the possible control of the enterprise by public bodies (see article 3, paragraph 4);
- information on possible exception due to merge or acquisition by a larger group (annex to the Commission decision (2012/838/EU) par. 1.1.3.1 6.e);
- data coming from consolidated accounts, where they exist (see article 6);
- the data referred to partner enterprises (see article 3, paragraph 2) and linked enterprises (see article 3, paragraph 3), in case they are not included in the counterparty accounts through consolidation, which shall be used for the calculation (see article 6);
- the data related to the previous period, which shall be kept by the reporting bank (see article 4, paragraph 2).

The absence of the data necessary for the calculation may implicate the classification of the counterparty as “large enterprise”.

5.1.2 Description of input information

5.1.2.1 Cube Counterparties (CNTRPRTS)

Counterparty ID	...	Date of enterprise size	Number of employees	Balance sheet total	Annual turnover	Type of enterprise	Control by public bodies	Enterprise size choice	Enterprise size (input)	Exception due to merge or acquisition

¹⁴ All following quotations of articles and paragraphs refer to this legal text, unless otherwise specified.

For *Number of employees (NMBR_EMPLYS)*, *Balance sheet total (BLNC_SHT_TTL)* and *Annual turnover (ANNL_TRNVR)* see definitions in AnaCredit Regulation. Data are determined exclusively on the basis of the individual accounts of that enterprise.

Date of enterprise size (DT_ENTRPRS_SZ)

See definition in AnaCredit Regulation. It corresponds to the latest date of closure of the accounts (see article 4, paragraph 1). In the case of newly established enterprises whose accounts have not yet been approved, the data to apply is to be derived from a bona fide estimate made in the course of the financial year (see article 4, paragraph 3).

Enterprise size choice (ENTRPRS_SZ_CHC)

It identifies the counterparties for which the bank chooses to provide the enterprise size directly in the input. It may assume the following values:

- 0 = the enterprise size is calculated by the BIRD derivation rule;
- 1 = the enterprise size is compiled directly in the input (the BIRD derivation rule is not run).

Type of enterprise (TYP_ENTRPRS)

It may assume the following values:

- 0 = not applicable;
- 1 = not an enterprise (see article 1);
- 2 = autonomous enterprise (see article 3, paragraph 1);
- 3 = enterprise having partner enterprises or linked enterprises (see article 3, paragraphs 2 and 3).

In case the variable *Enterprise size choice* = 1 the value 0 may be used. If *Type of enterprise* = 3 the value of the variable *Counterparty identifier (CNTRPRTY_ID)* must be present in the cube *Linked enterprises* or in the cube *Group counterparty relationship* as *Counterparty identifier*.

Exception due to merge or acquisition (EXCPTN_MRG_ACQSTN)

It identifies the case described in the annex to the Commission decision (2012/838/EU) par. 1.1.3.1 6.e, according to which the article 4(2) is not applicable if an SME is merged or acquired by a larger group, in which case the SME shall lose its status immediately from the date of transaction. It may assume the following values:

- 0 = not applicable;
- 1 = change in ownership due to a merge or acquisition;
- 2 = no change in ownership due to a merge or acquisition.

It is applicable only if *Type of enterprise* ≠ 1. In case the variable *Enterprise size choice* = 1 the value 0 may be used.

Control by public bodies (CNTRL_PBLC_BDS)

It identifies the case of article 3, paragraph 4, in which an enterprise cannot be considered an SME. It may assume the following values:

- 0 = not applicable;
- 1 = true;
- 2 = false.

In case the variable *Enterprise size choice* = 1 the value 0 may be used.

Enterprise size (input) (ENTRPRS_SZ_INPT)

Classification of enterprises by size, in accordance with the Annex to Commission Recommendation 2003/361/EC (for counterparties for which the bank provides the enterprise size directly in the input). It may assume the following values:

- 0 = not applicable;
- 1 = large enterprise;
- 2 = medium enterprise;
- 3 = small enterprise;
- 4 = micro enterprise;
- 9 = not an enterprise.

In case the variable *Enterprise size choice* = 1 the value 0 may not be used.

5.1.2.2 Cube Linked enterprises (LNKD_ENTRPRSS)

It comprises all linked enterprises (see article 3, paragraph 3) to a counterparty, including the counterparty itself, where the data are not included in the cube *Group data*. The data are derived from their individual accounts or their other individual data.

It is necessary to compile this cube only for the counterparties with *Enterprise size choice* = 0.

Counterparty ID	Linked enterprise ID	Number of employees	Balance sheet total	Annual turnover

The variable *Linked enterprise identifier* (LNKD_ENTRPRS_ID) contains the identifier of the linked enterprise.

5.1.2.3 Cube Partner enterprises (PRTNR_ENTRPRSS)

It comprises all partner enterprises (see article 3, paragraph 2) to a counterparty. It does not comprise the enterprises whose data are already included in the counterparty accounts through consolidation. It comprises the partner enterprises of a linked enterprise to a counterparty unless it has already been included in the consolidated accounts with a percentage at least proportional to the percentage interest in the capital or voting rights (whichever is greater), in case of cross-holding the greater percentage applies.

The data of the partner enterprises are derived from their accounts and their other data, consolidated if they exist.

In case the partner enterprises has one or more linked enterprises, the 100% of the data of the linked enterprises must be added to the partner enterprises data unless their accounts are already included through consolidation¹⁵.

It is necessary to compile this cube only for the counterparties with *Enterprise size choice* = 0.

¹⁵ The data of an enterprise are filled by following the criteria of article 6, paragraph 3 (subparagraph 1).

Counterparty ID	Partner enterprise ID	Number of employees	Balance sheet total	Annual turnover	Percentage interest in the capital or voting rights

The variable *Partner enterprise identifier (PRTNR_ENTRPRS_ID)* contains identifies the partner enterprise.

The variable *Percentage interest in the capital or voting rights (PRCNTG_INTRST_CPTL_VTNG_RGHTS)* contains the percentage interest in the capital or voting rights (whichever is greater).

5.1.2.4 Cube Group data (GRP_DT)

It includes, where they exist, data originating from the consolidated accounts of the counterparty or from the consolidated accounts in which the counterparty is included through consolidation.

It also includes, if they exist, data originating from the consolidated accounts of linked enterprises, unless their accounts data are already included through consolidation.

Where in the consolidated accounts no staff data appear for a given enterprise, staff figures (to be included in this cube) are calculated by aggregating proportionally the data from its partner enterprises and by adding the data from the enterprises to which the enterprise in question is linked.

As an example if the enterprises A is linked with enterprises C and D and all of them are fully consolidated in GROUP Z the GROUP Z data has to be provided in the following cube together with the relation between Z and A in the cube “Group counterparty relationship”.

Group Internal ID	Number of employees	Balance sheet total	Annual turnover

The variable *Group internal ID (GRP_INTRNL_ID)* identifies the group whose consolidated data are used in the calculation of the enterprise size.

5.1.2.5 Cube Group counterparty relationship (GRP_CNTRPTY_RLTNSHP)

It connects all groups whose consolidated data are present in the cube *Group data* to the counterparties for which these data are used in the calculation of the enterprise size.

Group Internal ID	Counterparty ID

5.1.2.6 Cube Enterprise size (previous period) (ENTRPRS_SZ_PRVS_PRD)

It contains information on the enterprise size calculated for the previous accounting period.

Counterparty ID	Enterprise size (calculated)	Enterprise size (preliminary)

Enterprise size (preliminary) (ENTRPRS_SZ_PRLMNR)

Preliminary setting of the enterprise size as calculated for the previous accounting period “(see STEP 2 and STEP 3 of the derivation rule). It may assume the following values:

- 2 = medium enterprise;
- 3 = small enterprise;
- 4 = micro enterprise;
- 6 = large enterprise (from input data);
- 7 = large enterprise because of absence of input data.

Enterprise size (calculated) (ENTRPRS_SZ_CLCLTD)

Enterprise size as calculated for the previous accounting period “(see STEP 2 and STEP 4 of the derivation rule). It may assume the following values:

- 2 = medium enterprise;
- 3 = small enterprise;
- 4 = micro enterprise;
- 6 = large enterprise (from input data);
- 7 = large enterprise because of absence of input data.

5.1.3 VTL expression and illustrative examples

CNTRPRTS										
CNTRPRTY_ID	...	DT_ENTRPRS_SZ	NMBR_EMPLYS	BLNC_SHT_TTL	ANNL_TRNVR	TYP_ENTRPRS	CNTRL_PBLC_BDS	ENTRPRS_SZ_CHC	ENTRPRS_SZ_INPT	EXCPTN_MRG_ACQSTN
E			200	8000	9000	3	2	0	0	1
H			5	500	450	3	2	0	0	2
A			50	5000	5000	2	2	0	0	2
L			345	33214	32321	0	2	1	1	1
J			350	8000	8000	2	2	0	0	2

LNKD_ENTRPRSS				
CNTRPRTY_ID	LNKD_ENTRPRS_ID	NMBR_EMPLYS	BLNC_SHT_TTL	ANNL_TRNVR
E	G	60	3000	2500
E	F	150	2000	6000

PRTNR_ENTRPRSS					
CNTRPRTY_ID	PRTNR_ENTRPRS_ID	NMBR_EMPLYS	BLNC_SHT_TTL	ANNL_TRNVR	PRCNTG_INTRST_CPTL_VTNG_RGHTS
E	H	5	500	450	0.35
H	G	60	3000	2500	0.35

GRP_DT			
GRP_INTRNL_ID	NMBR_EMPLYS	BLNC_SHT_TTL	ANNL_TRNVR
Y	3000	9000	4050
Z	2000	85000	98000

GRP_CNTRPRTY_RLTNSHP	
GRP_INTRNL_ID	CNTRPRTY_ID
Y	H
Z	E

ENTRPRS_SZ_PRVS_PRD		
CNTRPRTY_ID	ENTRPRS_SZ_CLCLTD	ENTRPRS_SZ_PRLMNRY
E	2	2
H	6	4
A	2	2

/* CNTRPRTS_ATNMS contains the counterparties that are autonomous or not an enterprise, and for which the enterprise size is calculated */

CNTRPRTS_ATNMS := CNTRPRTS [filter(ENTRPRS_SZ_CHC=0 and TYP_ENTRPRS in (1, 2))] [keep(CNTRPRTY_ID, NMBR_EMPLYS, BLNC_SHT_TTL,ANNL_TRNVR, TYP_ENTRPRS, CNTRL_PBLC_BDS, EXCPTN_MRG_ACQSTN)]

CNTRPRTY_ATNMS						
CNTRPRTY_ID	NMBR_EMPLYS	BLNC_SHT_TTL	ANNL_TRNVR	TYP_ENTRPRS	CNTRL_PBLC_BDS	EXCPTN_MRG_ACQSTN
A	50	5000	5000	2	2	2
J	350	8000	8000	2	2	2

/* CNTRPRTS_PRVS contains the calculated values in the previous period. For those counterparties for which there was no value in the previous period, a null value is assigned */

CNTRPRTS_PRVS := [left CNTRPRTS as "A", ENTRPRS_SZ_PRVS_PRD as "B" on A.CNTRPRTY_ID = B.CNTRPRTY_ID] {keep(A.CNTRPRTY_ID as "CNTRPRTY_ID", B.ENTRPRS_SZ_CLCLTD as "ENTRPRS_SZ_CLCLTD", B.ENTRPRS_SZ_PRLMNRY as "ENTRPRS_SZ_PRLMNRY")}

CNTRPRTY_PRVS		
CNTRPRTY_ID	ENTRPRS_SZ_CLCLTD	ENTRPRS_SZ_PRLMNRY
E	2	2
H	6	4
A	2	2
J		

```
/* In order to aggregate the partner enterprises, the relevant figures have to be multiplied by the percentage of interest in the capital or voting rights */
PRTNR_ENTRPRS_AGG := PRTNR_ENTRPRS [calc(PRCNTG_INTRST_CPTL_VING_RGHTS * BLNC_SHT_TTL as "AGGRGBL_BLNC_SHT_TTL" role MEASURE,
PRCNTG_INTRST_CPTL_VING_RGHTS * NMBR_EMPLYYS as "AGGRGBL_NMBR_EMPLYYS" role MEASURE, PRCNTG_INTRST_CPTL_VING_RGHTS * ANNL_TRNVR as
"AGGRGBL_ANNL_TRNVR" role MEASURE)]
```

PRTNR_ENTRPRS_AGG

CNTRPRTY_ID	PRTNR_ENTRPRS_ID	NMBR_EMPLYYS	BLNC_SHT_TTL	ANNL_TRNVR	PRCNTG_INTRST_CPTL_VING_RGHTS	AGGRGBL_NMBR_EMPLYYS	AGGRGBL_BLNC_SHT_TTL	AGGRGBL_ANNL_TRNVR
E	H	5	500	450	0.35	1.75	175	157.5
H	G	60	3000	2500	0.35	21	1050	875

```
/* For group enterprises, the relevant figures are taken from the group data */
GRP_ENTRPRS_AGG := [GRP_DT as "A", GRP_CNTRPRTY_RLTNSHP as "B" on (A.GRP_INTRNL_ID = B.GRP_INTRNL_ID )] {keep(B.CNTRPRTY_ID as
"CNTRPRTY_ID", A.NMBR_EMPLYYS as "AGGRGBL_NMBR_EMPLYYS", A.BLNC_SHT_TTL as "AGGRGBL_BLNC_SHT_TTL", A.ANNL_TRNVR as
"AGGRGBL_ANNL_TRNVR")}
```

GRP_ENTRPRS_AGG

CNTRPRTY_ID	AGGRGBL_NMBR_EMPLYYS	AGGRGBL_BLNC_SHT_TTL	AGGRGBL_ANNL_TRNVR
H	3000	9000	4050
E	2000	85000	98000

```
/* The relevant figures for all counterparties have to be aggregated in order to have one single value for each counterparty */
TTL_AGG :=
PRTNR_ENTRPRS_AGG[keep CNTRPRTY_ID, AGGRGBL_BLNC_SHT_TTL, AGGRGBL_NMBR_EMPLYYS, AGGRGBL_ANNL_TRNVR] +
LNKD_ENTRPRS [keep CNTRPRTY_ID, NMBR_EMPLYYS as "AGGRGBL_NMBR_EMPLYYS", BLNC_SHT_TTL as "AGGRGBL_BLNC_SHT_TTL", ANNL_TRNVR as
"AGGRGBL_ANNL_TRNVR" ] +
GRP_ENTRPRS_AGG [keep CNTRPRTY_ID, AGGRGBL_BLNC_SHT_TTL, AGGRGBL_NMBR_EMPLYYS, AGGRGBL_ANNL_TRNVR] +
CNTRPRTY_ATNMS [keep CNTRPRTY_ID, BLNC_SHT_TTL as "AGGRGBL_BLNC_SHT_TTL", NMBR_EMPLYYS as "AGGRGBL_NMBR_EMPLYYS", ANNL_TRNVR as
"AGGRGBL_ANNL_TRNVR" ]
```

TTL_AGG

CNTRPRTY_ID	AGGRGBL_NMBR_EMPLYYS	AGGRGBL_BLNC_SHT_TTL	AGGRGBL_ANNL_TRNVR
E	2211.75	90175	106657.5

April, 2017

H	3001.75	10050	4925
A	50	5000	5000
J	350	8000	8000

```

/* Preliminary setting is the pure calculation of enterprise size before considering the results in the previous period */
PRLMNRY_STING := TTL_AGG [calc
if isnull(AGGRGBL_NMBR_EMPLYYS) or (isnull(AGGRGBL_BLNC_SHT_TTL) and isnull(AGGRGBL_ANNL_TRNVR)) then 7
elseif AGGRGBL_NMBR_EMPLYYS < 10 and (AGGRGBL_BLNC_SHT_TTL <= 2000000 or AGGRGBL_ANNL_TRNVR <= 2000000) then 4
elseif AGGRGBL_NMBR_EMPLYYS < 50 and (AGGRGBL_BLNC_SHT_TTL <= 10000000 or AGGRGBL_ANNL_TRNVR <= 10000000) then 3
elseif AGGRGBL_NMBR_EMPLYYS < 250 and (AGGRGBL_BLNC_SHT_TTL <= 43000000 or AGGRGBL_ANNL_TRNVR <= 50000000) then 2
else 6
as "ENTRPRS_SZ_PRLMNRY_T" ]

```

PRLMNRY_STING				
CNTRPRTY_ID	AGGRGBL_NMBR_EMPLYYS	AGGRGBL_BLNC_SHT_TTL	AGGRGBL_ANNL_TRNVR	ENTRPRS_SZ_PRLMNRY_T
E	2211.75	90175	106657.5	6
H	3001.75	10050	4925	6
A	50	5000	5000	2
J	350	8000	8000	6

```

ALL := [PRLMNRY_STING as "A", CNTRPRTS_PRVS as "B", CNTRPRTS as "C" on (A.CNTRPRTY_ID = B.CNTRPRTY_ID and A.CNTRPRTY_ID =
C.CNTRPRTY_ID)] {keep(A.CNTRPRTY_ID, A.ENTRPRS_SZ_PRLMNRY_T, B.ENTRPRS_SZ_CLCLTD, B.ENTRPRS_SZ_PRLMNRY, C.TYP_ENTRPRS,
C.CNTRL_PBLC_BDS, C.EXCPIN_MRG_ACQSTN as "MRGACQ")}

```

ALL						
CNTRPRTY_ID	ENTRPRS_SZ_PRLMNRY_T	ENTRPRS_SZ_CLCLTD	ENTRPRS_SZ_PRLMNRY	TYP_ENTRPRS	CNTRL_PBLC_BDS	MRGACQ
E	6	2	2	3	2	1
H	6	6	4	3	2	2
A	2	2	2	2	2	2
J	6			2	2	2

```

/* The final setting takes into account: Whether: (i) The enterprise is not an enterprise (TYP_ENTERPRS=1); (ii) it is controlled
by public bodies; (iii) There were no input data (ENTRPRS_SZ_PRLMNR_T = 7); (iv) there was no information regarding previous
periods; (v) the mergers and acquisitions exception applies; and (vi) in any other case, the interaction between the result of the
calculation for the current period plus the results for previous period applies */
FNL_STING := ALL[calc
(if TYP_ENTERPRS = 1 then 9
elseif CNTRL_PBLC_BDS = 1 then 6
elseif ENTRPRS_SZ_PRLMNR_T = 7 then 7
elseif ENTRPRS_SZ_CLCLTD =null then ENTRPRS_SZ_PRLMNR_T
elseif MRGACQ=1 then ENTRPRS_SZ_PRLMNR_T
elseif ENTRPRS_SZ_PRLMNR_T = 4 then
    if ENTRPRS_SZ_CLCLTD = 4 then 4
        elseif ENTRPRS_SZ_CLCLTD in (6,2,3,7) and ENTRPRS_SZ_PRLMNR_T = 4 then 4
        elseif ENTRPRS_SZ_CLCLTD = 3 and ENTRPRS_SZ_PRLMNR_T in (6,2,3,7) then 3
        elseif ENTRPRS_SZ_CLCLTD = 2 and ENTRPRS_SZ_PRLMNR_T = 3 then 3
        elseif ENTRPRS_SZ_CLCLTD = 2 and ENTRPRS_SZ_PRLMNR_T in (6,2,7) then 2
        elseif ENTRPRS_SZ_CLCLTD in (6,7) and ENTRPRS_SZ_PRLMNR_T = 3 then 3
        elseif ENTRPRS_SZ_CLCLTD in (6,7) and ENTRPRS_SZ_PRLMNR_T = 2 then 2
        else if ENTRPRS_SZ_CLCLTD in (6,7) and ENTRPRS_SZ_PRLMNR_T in (6,7) then 6
        else null
elseif ENTRPRS_SZ_PRLMNR_T = 3 then
    if ENTRPRS_SZ_CLCLTD = 3 then 3
        elseif ENTRPRS_SZ_CLCLTD in (6,2,4,7) and ENTRPRS_SZ_PRLMNR_T = 3 then 3
        elseif ENTRPRS_SZ_CLCLTD = 4 and ENTRPRS_SZ_PRLMNR_T = 4 then 4
        elseif ENTRPRS_SZ_CLCLTD = 4 and ENTRPRS_SZ_PRLMNR_T in (6,2,7) then 3
        elseif ENTRPRS_SZ_CLCLTD = 2 and ENTRPRS_SZ_PRLMNR_T = 4 then 3
        elseif ENTRPRS_SZ_CLCLTD = 2 and ENTRPRS_SZ_PRLMNR_T in (6,2,7) then 2
        elseif ENTRPRS_SZ_CLCLTD in (6,7) and ENTRPRS_SZ_PRLMNR_T = 4 then 3
        elseif ENTRPRS_SZ_CLCLTD in (6,7) and ENTRPRS_SZ_PRLMNR_T = 2 then 2
        else if ENTRPRS_SZ_CLCLTD in (6,7) and ENTRPRS_SZ_PRLMNR_T in (6,7) then 6
        else null
elseif ENTRPRS_SZ_PRLMNR_T = 2 then
    if ENTRPRS_SZ_CLCLTD = 2 then 2
        elseif ENTRPRS_SZ_CLCLTD in (6,3,4,7) and ENTRPRS_SZ_PRLMNR_T = 2 then 2
        elseif ENTRPRS_SZ_CLCLTD = 4 and ENTRPRS_SZ_PRLMNR_T = 4 then 4

```

```

elseif ENTRPRS_SZ_CLCLTD = 4 and ENTRPRS_SZ_PRLMNRY = 3 then 3
elseif ENTRPRS_SZ_CLCLTD = 4 and ENTRPRS_SZ_PRLMNRY in (6,7) then 2
elseif ENTRPRS_SZ_CLCLTD = 3 and ENTRPRS_SZ_PRLMNRY = 4 then 3
elseif ENTRPRS_SZ_CLCLTD = 3 and ENTRPRS_SZ_PRLMNRY in (6,7) then 2
elseif ENTRPRS_SZ_CLCLTD = 3 and ENTRPRS_SZ_PRLMNRY = 3 then 3
elseif ENTRPRS_SZ_CLCLTD in (6,7) and ENTRPRS_SZ_PRLMNRY in (3,4) then 2
else if ENTRPRS_SZ_CLCLTD in (6,7) and ENTRPRS_SZ_PRLMNRY in (6,7) then 6
else null
elseif ENTRPRS_SZ_PRLMNRY_T = 6 then
  if ENTRPRS_SZ_CLCLTD in (6,7) then 6
  elseif ENTRPRS_SZ_CLCLTD in (2,3,4) and ENTRPRS_SZ_PRLMNRY in (6,7) then 6
  elseif ENTRPRS_SZ_CLCLTD = 2 and ENTRPRS_SZ_PRLMNRY in (2,3,4) then 2
  elseif ENTRPRS_SZ_CLCLTD = 3 and ENTRPRS_SZ_PRLMNRY = 2 then 2
  elseif ENTRPRS_SZ_CLCLTD = 3 and ENTRPRS_SZ_PRLMNRY in (3,4) then 3
  elseif ENTRPRS_SZ_CLCLTD = 4 and ENTRPRS_SZ_PRLMNRY = 2 then 2
  elseif ENTRPRS_SZ_CLCLTD = 4 and ENTRPRS_SZ_PRLMNRY = 3 then 3
  else if ENTRPRS_SZ_CLCLTD = 4 and ENTRPRS_SZ_PRLMNRY = 4 then 4
  else null
else null
) as "ENTRPRS_SZ_CLCLTD_T"]

```

FNL_STTNG						
CNTRPRTY_ID	ENTRPRS_SZ_PRLMNRY_T	ENTRPRS_SZ_CLCLTD	ENTRPRS_SZ_PRLMNRY	TYP_ENTRPRS	CNTRL_PBLC_BDS	ENTRPRS_SZ_CLCLTD_T
E	6	2	2	3	2	6
H	6	6	4	3	2	6
A	2	2	2	2	2	2
J	6			2	2	6

```

FNL_STTNG := FNL_STTNG [keep (CNTRPRTY_ID, ENTRPRS_SZ_CLCLTD_T as "ENTRPRS_SZ_CLCLTD"), calc ("T" as "IS_DRVD_ENTRPRS_SZ" role MEASURE)]

```

FNL_STTNG		
CNTRPRTY_ID	ENTRPRS_SZ_CLCLTD	IS_DRVD_ENTRPRS_SZ
E	6	T
H	6	T

April, 2017

A	2	T
J	6	T

```
/* CNTRPRTS_INPT contains the counterparties for which the enterprise size is provided as input already with the structure that
can be united with the calculations ("Counterparty ID", "Enterprise size calculated", "Enterprise size choice") */
CNTRPRTS_INPT := CNTRPRTS[filter(ENTRPRS_SZ_CHC=1), keep (CNTRPRTY_ID, ENTRPRS_SZ as "ENTRPRS_SZ_CLCLTD" , calc ("F" as
"IS_DRVD_ENTRPRS_SZ" role MEASURE)]
```

CNTRPRT_INPT		
CNTRPRTY_ID	ENTRPRS_SZ_CLCLTD	IS_DRVD_ENTRPRS_SZ
L	0	F

```
D_ENTRPRS_SZ_CLCLTD1 := union(FNL_STING, CNTRPRTS_INPT)
```

D_ENTRPRS_SZ_CLCLTD1		
CNTRPRTY_ID	ENTRPRS_SZ_CLCLTD	IS_DRVD_ENTRPRS_SZ
E	6	T
H	6	T
A	2	T
J	6	T
L	0	F

```
D_ENTRPRS_SZ_CLCLTD1 := D_ENTRPRS_SZ_CLCLTD1 [calc
(if ENTRPRS_SZ_CLCLTD in (0,9) then 0
else if ENTRPRS_SZ_CLCLTD in (1,6,7) then 1
else ENTRPRS_SZ_CLCLTD)
as "ENTRPRS_SZ"]
```

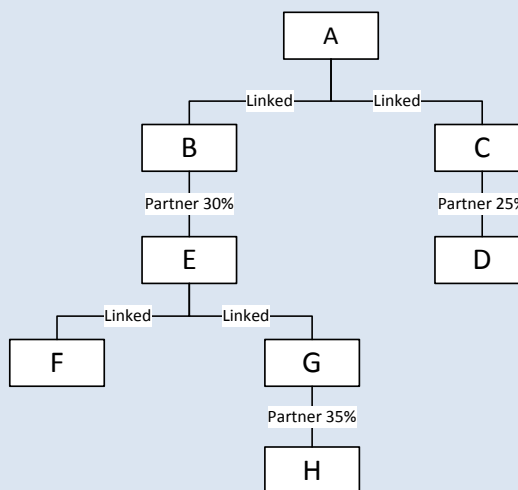
D_ENTRPRS_SZ_CLCLTD1			
CNTRPRTY_ID	ENTRPRS_SZ_CLCLTD	IS_DRVD_ENTRPRS_SZ	ENTRPRS_SZ
E	6	T	1
H	6	T	1
A	2	T	2
J	6	T	1
L	0	F	0

D_ENTRPRS_SZ_CLCLTD1 := D_ENTRPRS_SZ_CLCLTD1 [keep (CNTRPTY_ID, ENTRPRS_SZ, IS_DRVD_ENTRPRS_SZ)]

CNTRPTY_ID	IS_DRVD_ENTRPRS_SZ	ENTPRS_SZ
E	T	1
H	T	1
A	T	2
J	T	1
L	F	0

5.1.4 Illustrative examples on how to feed the cubes

Example 2: No consolidated data



Counterparty A:

Cube “Counterparties”

Counterparty ID	...	Date of Enterprise size	Number of employees	Balance sheet total	Annual turnover	Type of enterprise	Control by public bodies	Enterprise size choice	Enterprise size (input)	Exception due to merger or acquisition
A		A data	A data	A data	A data	A data	A data	A data	A data	A data

Cube “Linked enterprises”

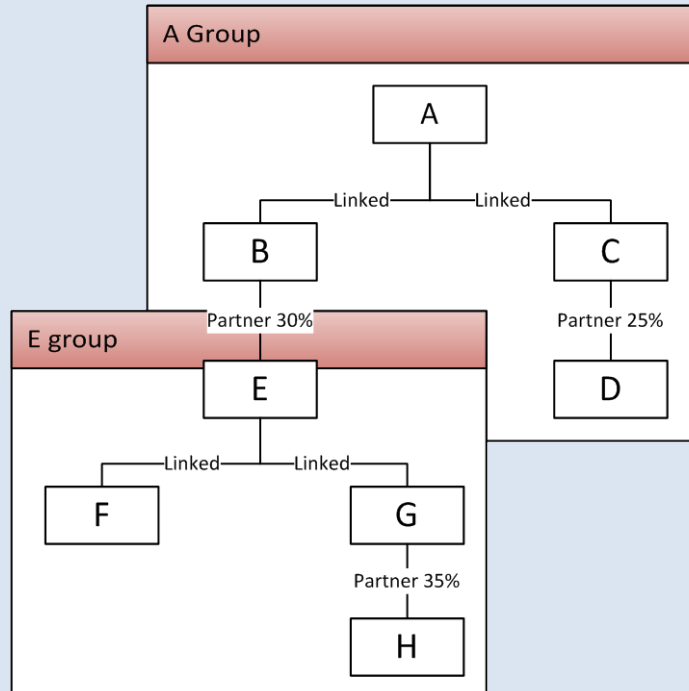
Counterparty ID	Linked enterprise ID	Number of employees	Balance sheet total	Annual turnover
A	B	B data	B data	B data
A	C	C data	C data	C data
A	A	A data	A data	A data

Cube “Partner enterprises”

Counterparty ID	Partner enterprise ID	Number of employees	Balance sheet total	Annual turnover	Percentage interest in the capital or voting rights
A	D	D data	D data	D data	25%
A	E	E +F+G data	E +F+G data	E +F+G data	30%

Example 3: Consolidated data

Notice that in this case **E** is not included in **A** consolidated accounts.



Counterparty A:

Cube “Counterparties”

Counterparty ID	...	Date of Enterprise size	Number of employees	Balance sheet total	Annual turnover	Type of enterprise	Control by public bodies	Enterprise size choice	Enterprise size (input)	Exception due to merger or acquisition
A		A data	A data	A data	A data	A data	A data	A data	A data	A data

Cube “Linked enterprises”

Counterparty ID	Linked enterprise ID	Number of employees	Balance sheet total	Annual turnover

Cube “Partner enterprises”

Counterparty ID	Partner enterprise ID	Number of employees	Balance sheet total	Annual turnover	Percentage interest in the capital or voting rights
A	E group ID	E group data	E group data	E group data	30%

Cube “Group data”

Group Internal ID	Number of employees-Group	Group Balance sheet total	Group Annual turnover
A group ID	A group data	A group data	A group data

Cube "Group counterparty relationship"

Group Internal ID	Counterparty ID
A Group ID	A

Example 4:

Counterparty G:

Cube “Counterparties”

Counterparty ID	...	Date of Enterprise size	Number of employees	Balance sheet total	Annual turnover	Type of enterprise	Control by public bodies	Enterprise size choice	Enterprise size (input)	Exception due to merger or acquisition
G		G data	G data	G data	G data	G data	G data	G data	G data	G data

Cube “Linked enterprises”

Counterparty ID	Linked enterprise ID	Number of employees	Balance sheet total	Annual turnover

Cube “Partner enterprises”

Counterparty ID	Partner enterprise ID	Number of employees	Balance sheet total	Annual turnover	Percentage interest in the capital or voting rights
G	A group ID	A group data	A group data	A group data	30%

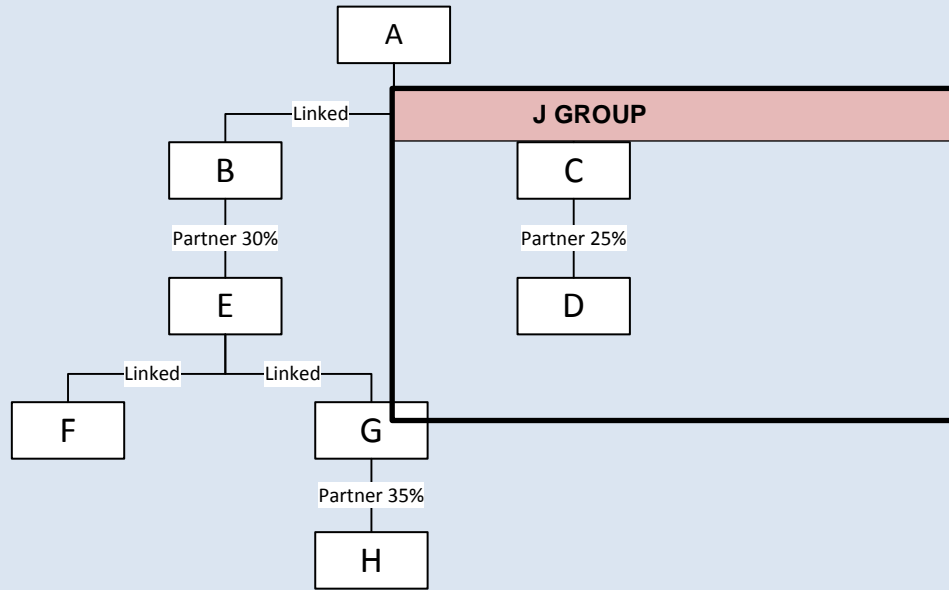
Cube “Group data”

Group Internal ID	Number of employees- Group	Group Balance sheet total	Group Annual turnover
E group ID	E group data	E group data	E group data

Cube “Group counterparty relationship”

Group Internal ID	Counterparty ID
E Group ID	G

Example 5:



Counterparty A:

Cube “Counterparties”

Counterparty ID	...	Date of Enterprise size	Number of employees	Balance sheet total	Annual turnover	Type of enterprise	Control by public bodies	Enterprise size choice	Enterprise size (input)	Exception due to merge or acquisition
A		A data	A data	A data	A data	A data	A data	A data	A data	A data

Cube “Linked enterprises”

Counterparty ID	Linked enterprise ID	Number of employees	Balance sheet total	Annual turnover
A	B	B data	B data	B data

Cube “Partner enterprises”

Counterparty ID	Partner enterprise ID	Number of employees	Balance sheet total	Annual turnover	Percentage interest in the capital or voting rights
A	E	E+F+G data	E+F+G data	E+F+G data	30%

Cube “Group data”

Group Internal ID	Number of employees- Group	Group Balance sheet total	Group Annual turnover
J group ID	J group data	J group data	J group data

Cube “Group counterparty relationship”

Group Internal ID	Counterparty ID
J Group ID	A

5.2 Derivation of Carrying amount

5.2.1 Scope (applicability)

- The derivation rule applies only to banks that use IFRS.
- The derivation rule shall only apply if the variable *Is carrying amount derived (IS_CRRYG_AMNT_DRVD)* in the parameters cube has the value 1.
- The derivation rule applies to loans and owned securities

5.2.2 Natural language

For instruments fair valued according to their accounting classification, the carrying amount is equal to the fair value of the instrument.

For instruments at amortised cost according to their accounting classification, the carrying amount is equal to their gross carrying amount excluding accrued interest plus their accrued interest minus their accumulated impairment plus the fair value changes due to hedge accounting.

5.2.3 Involved elements

Accounting classification (ACCNTNG_CLSFCTN): Accounting portfolio where the instrument is recorded in accordance with the accounting standard – IFRS or national GAAP –under Regulation (EU) 2015/534 (ECB/2015/13) applied by the observed agent's legal entity. Involved values:

ID	DESCRIPTION	DEFINITION
14	IFRS: Cash balances at central banks and other demand deposits	Cash balances at central banks and other demand deposits in accordance with IFRS.
6	IFRS: Financial assets at amortised cost	Financial assets measured at amortised cost in accordance with IFRS.
8	IFRS: Financial assets at fair value through other comprehensive income	Financial assets measured at fair value through other comprehensive income due to business model and cash-flows characteristics in accordance with IFRS.
4	IFRS: Financial assets designated at fair value through profit or loss	Financial assets measured at fair value through profit and loss and designated as such upon initial recognition or subsequently in accordance with IFRS, except those classified as financial assets held for trading.
2	IFRS: Financial assets held for trading	Financial assets held for trading in accordance with IFRS.
41	IFRS: Non-trading financial assets mandatorily at fair value through profit or loss	Non-trading financial assets mandatorily at fair value through profit or loss in accordance with IFRS.

Fair value (FV): Fair value as defined in IFRS 13.9.

Gross carrying amount excluding interest (GRSS_CRRYNG_AMNT_E_INTRST): Gross carrying amount, as defined in IFRS 9 appendix A, excluding accrued interest

Accrued interest (ACCRD_INTRST): The amount of accrued interest on loans at the reporting reference date as defined in Regulation (EU) No 1071/2013 (ECB/2013/33). In accordance with the general principle of accruals accounting, interest receivable on instruments should be subject to on-balance sheet recording as it accrues (i.e. on an accruals basis) rather than when it is actually received (i.e. on a cash basis).

Accumulated impairment (ACCMLTD_IMPRMNT): The amount of loss allowances that are held against or are allocated to the instrument on the reporting reference date. This data attribute applies to instruments subject to impairment under the applied accounting standard.

Fair value changes due to hedge accounting (FV_CHNG_HDG_ACCNTNG): Changes in the fair value of an instrument, which is a hedged item and measured at amortised cost, that are recognised in the carrying amount due to the application of hedge accounting (IFRS 9.6)

5.2.4 Explanation

This derivation rule aims to obtain the IFRS carrying amount from its basic building blocks. It can be split in two parts: For instruments measured at fair value, the carrying amount is simply the fair value of the instrument. For instruments measured at amortised cost, the carrying amount can be subdivided into components that are requested to be reported separately in many frameworks (notably accrued interest and accumulated impairment).

The following schema shows the relation between different values referred to in IFRS 9 or other frameworks:

Carrying amount	Amortised cost	Gross carrying amount	Gross carrying amount excluding interest
			Accrued interest
		(-) Accumulated impairment (loss allowance)	
		Fair value changes due to hedge accounting	

The concepts in green show the concepts required in AnaCredit, while the cells in yellow show the additional variables required in the input layer for instruments at amortised cost if the carrying amount is to be derived.

The following IFRS 9 definitions are related to the concepts above:

Amortised cost of a financial asset or financial liability: The amount at which the financial asset or financial liability is measured at initial recognition minus the principal repayments, plus or minus the cumulative amortisation using the effective interest method of any difference between that initial amount and the maturity amount and, for financial assets, adjusted for any loss allowance.

Gross carrying amount of a financial asset: The amortised cost of a financial asset, before adjusting for any loss allowance.

Loss allowance: The allowance for expected credit losses on financial assets measured in accordance with paragraph 4.1.2 (at amortised cost), lease receivables and contract assets, the accumulated impairment amount for financial assets measured in accordance with paragraph 4.1.2A (at fair value through other comprehensive income) and the provision for expected credit losses on loan commitments and financial guarantee contracts.

5.2.5 Illustrative examples

Let's suppose we have a loan with the following characteristics:

Initial date	30/05/2016
Number of instalments (annual)	5
Initial principal amount	1000
Annualised agreed rate	3%
Fair value at inception	990
Transaction costs	8

The resulting contractual amortisation table would be:

Contractual amortisation table

Date	Accrued interest in the period (contractual)	Instalment (contractual)	Outstanding nominal amount (after cash flow)
30/05/2016			1000
30/05/2017	30	218.35	811.65
30/05/2018	24.35	218.35	617.64
30/05/2019	18.53	218.35	417.81
30/05/2020	12.53	218.35	211.99
30/05/2021	6.36	218.35	0.00

The creditor classifies the loan as financial asset at amortised cost. For the application of the effective interest rate method, a new amortisation table shall be calculated, containing the figures to be used for calculated the gross carrying amount, as defined in IFRS 9 Appendix A (The amortised cost of a financial asset, before adjusting for any loss allowance)

The effective interest rate is, according to the IFRS 9, the rate that exactly discounts estimated future cash payments or receipts through the expected life of the financial asset or financial liability to the gross carrying amount of a financial asset.

The resulting effective interest rate, assuming that the estimated future cash receipts are the contractual ones, would be 3.07%. With this rate, the resulting accounting amortisation table would be:

Accounting amortisation table

Date	Accrued interest in the period (accounting)	Cash flow (estimated)	Gross carrying amount excluding accrued interest (after cash flow)
30/05/2016			998
30/05/2017	30.64	218.35	810.29

30/05/2018	24.88	218.35	616.81
30/05/2019	18.94	218.35	417.39
30/05/2020	12.81	218.35	211.85
30/05/2021	6.50	218.35	0.00

Note first that the gross carrying amount at inception is different to the outstanding nominal amount. This is due to the fact that the gross carrying amount excluding interest at inception is the initial measurement amount, i.e. the fair value plus the transaction costs.

Case 1

Reporting date 30/6/2016. The input variables (in blue) are provided by the operational systems. From there, the rest of variables can be easily derived.

Carrying amount = 1000.04	Amortised cost = 1000.04	Gross carrying amount = 1000.54	Gross carrying amount excluding interest = 998
			Accrued interest = 2.54
		(-) Accumulated impairment (loss allowance) = 0.5	
	Fair value changes due to hedge accounting = 0		

It is worth highlighting that:

- The *Gross carrying amount excluding interest* can be obtained from the accounting amortisation table.
- The accrued interest is calculated by applying the effective interest rate to the gross carrying amount excluding interest for the relevant accrual period.
- The *Outstanding nominal amount* in this case would be 1000. It is different to the *Gross carrying amount excluding interest* or the *Carrying amount*, since it is obtained from contractual figures, not accounting figures.

Case 2

Reporting date 30/06/2017, after the first instalment, which was duly paid.

Carrying amount = 811.86	Amortised cost = 811.86	Gross carrying amount = 812.36	Gross carrying amount excluding interest = 810.29
			Accrued interest = 2.07
		(-) Accumulated impairment (loss allowance) = 0.5	
	Fair value changes due to hedge accounting = 0		

It is worth highlighting that:

- The *Gross carrying amount excluding interest* can again be obtained from the accounting amortisation table.

- The *Outstanding nominal amount* would be in this case 811.65, as shown in the contractual amortisation table.

Case 3

Reporting date 31/12/2018. Let's now suppose that the payment due on 30/05/2018 was not satisfied, and that the loan is considered in stage 3 from 30/06/2018.

Carrying amount = 650.16	Amortised cost = 650.16	Gross carrying amount = 850.16	Gross carrying amount excluding interest = 810.29
			Accrued interest = 39.87
		(-) Accumulated impairment (loss allowance) = 200	
	Fair value changes due to hedge accounting = 0		

It is worth highlighting that:

- The *Gross carrying amount excluding interest* can again be obtained from the accounting amortisation table. But, given that the payment due was not satisfied, the amount to be considered is the one after the latest payment satisfied.
- The *Outstanding nominal amount* is simply would be 836 , calculated as the sum of the contractual outstanding amount after the last instalment paid (811.65) plus the interest accrued in the period until the instalment date, which can also be taken from the contractual amortisation table (24.35). No additional interest is to be added to that amount, since the variable is calculated *including unpaid past due interest but excluding accrued interest*.

5.3 Derivation of “Exposure class” and “Risk weight”

5.3.1 Introduction

The variables *Exposure class (EXPSR_CLSS)* and *Risk weight (RSK_WGHT)*, which are defined in the SHS framework in accordance with CRR, are calculated by the transformation rule D_EXPSR_CLSS_AND_RSK_WGHT. The rule is designed to be applied to the exposures for which the bank follows the standardised approach (SA) to calculate the risk-weighted exposure amounts, in accordance with Part three, Title II, Chapter 2 of CRR. When the internal ratings based (IRB) approach is followed, the bank has to feed the information on the exposure class and the risk weight directly in the input layer. This transformation rule is designed to satisfy SHS requirements.

Even if the SA approach is followed the bank may report the exposure class and the risk weight directly as an input without applying this transformation rule, in this case the value provided as input will be equal to the output.

At this stage, the transformation rule does not cover the following cases:

- possible changes of exposure class and risk weight due to credit risk mitigation (Part three, Title II, Chapter 4 of CRR);

- possible changes of exposure class and risk weight due to mortgages on immovable property (Part three, Title II, Chapter 2, Section 2, Articles 124 to 126);
- the treatment of synthetic securitisations (Part three, Title II, Chapter 5, Section 3, Sub-section 2 of CRR);
- specific treatments of securitisation positions (Part three, Title II, Chapter 5, Section 3, Sub-section 3, Articles 253 and 254 of CRR), for which some information should be calculated from securitised exposures.

5.3.2 The structure of the transformation rule

The transformation rule is executed on the instances of the cube “Owned securities” (OWND_SCRTY) and it comprises four steps.

1) Identification of exposures under IRB or to be classified as not applicable.

For the exposures for which the IRB approach is followed the exposure class and the risk weight are set equal to the variables provided in the input layer. Then some cases where these two variables are not applicable are identified, namely:

- trading book and no derogation for small trading book business;
- short positions;
- intra-group holdings;
- securitisation positions where the originator has not transferred significant credit risk;
- transferred assets where the originator has transferred significant credit risk.

Only if the exposure is in none of the cases here identified the following steps are executed.

2) The exposure class is assigned.

The prioritisation criteria followed by the rule are compliant with COREP decision tree.

For the exposure classes that are disjoint among themselves the assignment is mainly based on the institutional sector of the issuer. The following table summarizes this approach.

Exposure class	Institutional sectors	Additional conditions
6 - Exposures to central governments or central banks	S121	
	S1311	CHRCTRSTCS_CRDT_RSK = 0
13 - Exposures to regional governments or local authorities	S1312, S1313	CHRCTRSTCS_CRDT_RSK = 0
12 - Exposures to public sector entities	S122_A, S1311, S1312, S1313	CHRCTRSTCS_CRDT_RSK = 2
	S1314	
9 - Exposures to institutions without a short-term credit assessment	S122_A	CHRCTRSTCS_CRDT_RSK = 1 IS_CVRD_BND ≠ T IS_SHRT_TRM_CRDT_ASSSSMNT ≠ T
	S122_B1, S122_B2, S125_B, S125_C, S125_D, S125_E, S125_I, S126, S127	CHRCTRSTCS_CRDT_RSK = 1 IS_SHRT_TRM_CRDT_ASSSSMNT ≠ T
7 - Exposures to corporates without a short-term credit assessment	S11, S125_A, S128, S129, S14_A, S14_B, S15	IS_SHRT_TRM_CRDT_ASSSSMNT ≠ T
	S122_A, S122_B1, S122_B2, S125_B, S125_C, S125_D, S125_E, S125_I, S126, S127	CHRCTRSTCS_CRDT_RSK = 0 IS_SHRT_TRM_CRDT_ASSSSMNT ≠ T
	S1311, S1312, S1313	CHRCTRSTCS_CRDT_RSK = 3 IS_SHRT_TRM_CRDT_ASSSSMNT ≠ T
3 - Exposures in the form of covered bonds	S122_A	CHRCTRSTCS_CRDT_RSK = 1 IS_CVRD_BND = T
8 - Exposures to institutions and corporates with a short-term credit assessment	S11, S122_B1, S122_B2, S125_A, S125_B, S125_C, S125_D, S125_E, S125_I, S126, S127, S128, S129, S14_A, S14_B, S15	IS_SHRT_TRM_CRDT_ASSSSMNT = T
	S122_A	CHRCTRSTCS_CRDT_RSK = 0, 1 IS_CVRD_BND ≠ T IS_SHRT_TRM_CRDT_ASSSSMNT = T
	S1311, S1312, S1313	CHRCTRSTCS_CRDT_RSK = 3 IS_SHRT_TRM_CRDT_ASSSSMNT = T
4 - Exposures in the form of units or shares in CIUs	S123, S124	

Note: only the exposure classes mainly derived by the issuer's institutional sector are present in this table; therefore, the conditions to classify the exposure in other classes are not shown here.

3) The credit quality step is determined.

For each exposure class a credit quality step associated to a risk weight is assigned. Subject to certain conditions it is determined on the basis of the external credit assessment and it corresponds to the “credit quality step” referred to in the CRR. In other cases some other factors (original maturity, residual maturity, specific credit risk adjustments, etc.) are relevant.

The rule applies the criteria defined in the CRR. In particular, for some specific cases the approach taken by the BIRD group is as follows:

- when, in order to assign a certain risk weight, it is required that the exposure is “funded” in a currency, the group believes that the condition is fulfilled if that currency is the domestic currency of the owner;
- when an exposure to a public sector entity or to a regional government or local authority is to be treated as exposure to the central government, the group assumes that the credit assessment of ECAs may not be used.

4) The risk weight is assigned.

The risk weight is assigned on the basis of the cube “Calculation of risk weights” (CLCLTN_RSK_WGHT), which is composed by the variables *Exposure class* (EXPSR_CLSS), *Credit quality step in BIRD process* (CRDT_QLTY_STP_BIRD) and *Risk weight* (RSK_WGHT). The contents of this cube are provided in the table below. In some cases the value of the variable *Specific risk weight* is used, since it cannot be derived from other input information.

TABLE "Calculation of risk weights"

EXPSR_CLSS	CRDT_QLTY_STP_BIRD	RSK_WGHT	Explanation
6	1	0	Art. 114(2): Table 1
6	2	20	Art. 114(2): Table 1
6	3	50	Art. 114(2): Table 1
6	4	100	Art. 114(2): Table 1
6	5	100	Art. 114(2): Table 1
6	6	150	Art. 114(2): Table 1
6	10	0	Art. 137(2): Table 9
6	11	0	Art. 137(2): Table 9
6	12	20	Art. 137(2): Table 9
6	13	50	Art. 137(2): Table 9
6	14	100	Art. 137(2): Table 9
6	15	100	Art. 137(2): Table 9
6	16	100	Art. 137(2): Table 9
6	17	150	Art. 137(2): Table 9
6	81	0	Art. 114(3,4)
6	87	100	Art. 114(1)
6	99	SPCFC_RSK_WGHT	
9	1	20	Art. 120: Table 3
9	2	50	Art. 120: Table 3
9	3	50	Art. 120: Table 3
9	4	100	Art. 120: Table 3
9	5	100	Art. 120: Table 3
9	6	150	Art. 120: Table 3
9	11	20	Art. 120: Table 4
9	12	20	Art. 120: Table 4
9	13	20	Art. 120: Table 4
9	14	50	Art. 120: Table 4
9	15	50	Art. 120: Table 4
9	16	150	Art. 120: Table 4
9	21	20	Art. 121: Table 5
9	22	50	Art. 121: Table 5
9	23	100	Art. 121: Table 5
9	24	100	Art. 121: Table 5
9	25	100	Art. 121: Table 5
9	26	150	Art. 121: Table 5
9	81	0	Art. 113(7)
9	83	20	Art. 121(3), Art. 119(2)
9	87	100	Art. 121(2)
9	92	250	Art. 48(4)
9	99	SPCFC_RSK_WGHT	
13	1	20	Art. 120: Table 3
13	2	50	Art. 120: Table 3
13	3	50	Art. 120: Table 3
13	4	100	Art. 120: Table 3

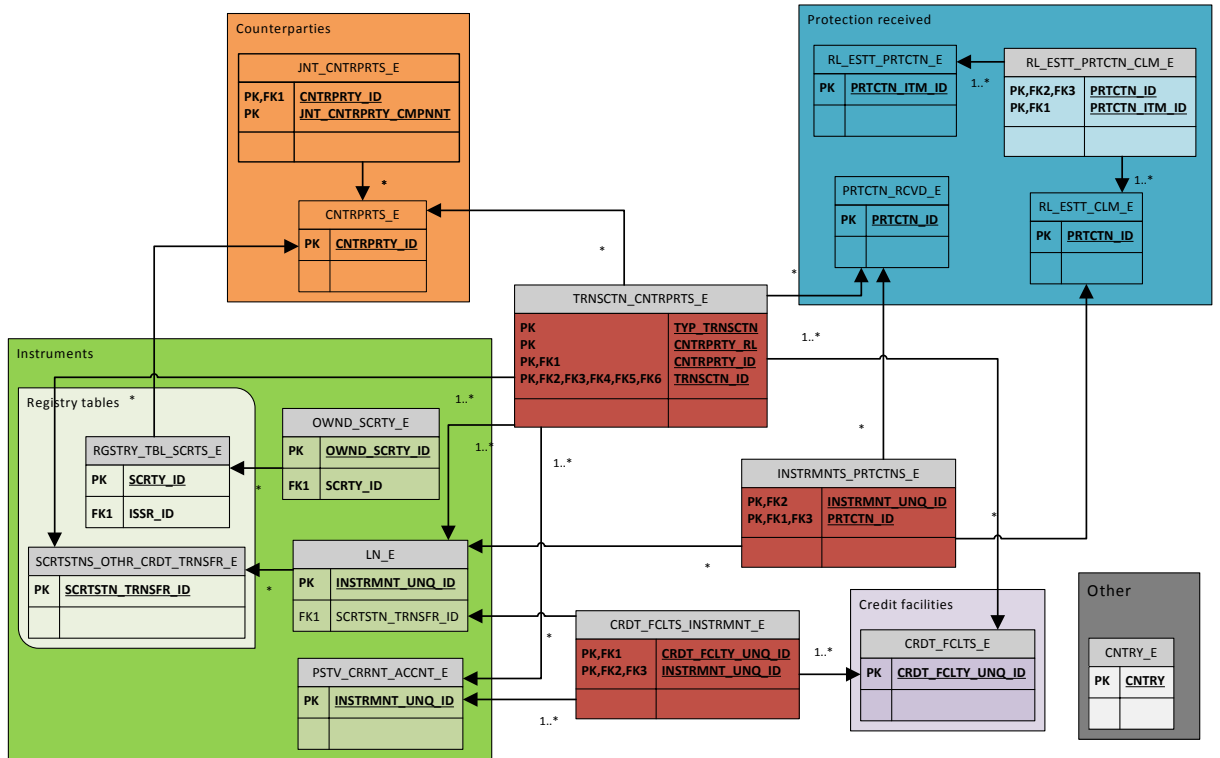
13	5	100	Art. 120: Table 3
13	6	150	Art. 120: Table 3
13	21	20	Art. 121: Table 5
13	22	50	Art. 121: Table 5
13	23	100	Art. 121: Table 5
13	24	100	Art. 121: Table 5
13	25	100	Art. 121: Table 5
13	26	150	Art. 121: Table 5
13	31	0	Art. 114(2): Table 1
13	32	20	Art. 114(2): Table 1
13	33	50	Art. 114(2): Table 1
13	34	100	Art. 114(2): Table 1
13	35	100	Art. 114(2): Table 1
13	36	150	Art. 114(2): Table 1
13	81	0	Art. 115(2), Art. 114(4)
13	83	20	Art. 121(3), Art. 115(5)
13	87	100	Art. 121(2)
13	99	SPCFC_RSK_WGHT	
12	1	20	Art. 120: Table 3
12	2	50	Art. 120: Table 3
12	3	50	Art. 120: Table 3
12	4	100	Art. 120: Table 3
12	5	100	Art. 120: Table 3
12	6	150	Art. 120: Table 3
12	21	20	Art. 116: Table 2
12	22	50	Art. 116: Table 2
12	23	100	Art. 116: Table 2
12	24	100	Art. 116: Table 2
12	25	100	Art. 116: Table 2
12	26	150	Art. 116: Table 2
12	31	0	Art. 114(2): Table 1
12	32	20	Art. 114(2): Table 1
12	33	50	Art. 114(2): Table 1
12	34	100	Art. 114(2): Table 1
12	35	100	Art. 114(2): Table 1
12	36	150	Art. 114(2): Table 1
12	41	20	Art. 120: Table 3
12	42	50	Art. 120: Table 3
12	43	50	Art. 120: Table 3
12	44	100	Art. 120: Table 3
12	45	100	Art. 120: Table 3
12	46	150	Art. 120: Table 3
12	51	20	Art. 121: Table 5
12	52	50	Art. 121: Table 5
12	53	100	Art. 121: Table 5
12	54	100	Art. 121: Table 5

12	55	100	Art. 121: Table 5
12	56	150	Art. 121: Table 5
12	81	0	Art. 116(4), Art. 114(4)
12	83	20	Art. 116(3)
12	87	100	Art. 116(1)
12	99	SPCFC_RSK_WGHT	
11	1	20	Art. 120: Table 3
11	2	50	Art. 120: Table 3
11	3	50	Art. 120: Table 3
11	4	100	Art. 120: Table 3
11	5	100	Art. 120: Table 3
11	6	150	Art. 120: Table 3
11	21	20	Art. 121: Table 5
11	22	50	Art. 121: Table 5
11	23	100	Art. 121: Table 5
11	24	100	Art. 121: Table 5
11	25	100	Art. 121: Table 5
11	26	150	Art. 121: Table 5
11	81	0	Art. 117(2)
11	87	100	Art. 121(2)
10	81	0	Art. 118
7	1	20	Art. 122: Table 6
7	2	50	Art. 122: Table 6
7	3	100	Art. 122: Table 6
7	4	100	Art. 122: Table 6
7	5	150	Art. 122: Table 6
7	6	150	Art. 122: Table 6
7	87	100	Art. 122(2)
7	88	150	Art. 122(2)
8	1	20	Art. 131: Table 7
8	2	50	Art. 131: Table 7
8	3	100	Art. 131: Table 7
8	4	150	Art. 131: Table 7
8	5	150	Art. 131: Table 7
8	6	150	Art. 131: Table 7
4	1	20	Art. 132: Table 8
4	2	50	Art. 132: Table 8
4	3	100	Art. 132: Table 8
4	4	100	Art. 132: Table 8
4	5	150	Art. 132: Table 8
4	6	150	Art. 132: Table 8
4	87	100	Art. 132(1)
4	99	SPCFC_RSK_WGHT	
3	1	10	Art. 129: Table 6a
3	2	20	Art. 129: Table 6a
3	3	20	Art. 129: Table 6a

3	4	50	Art. 129: Table 6a
3	5	50	Art. 129: Table 6a
3	6	100	Art. 129: Table 6a
3	21	10	Art. 129(5)
3	22	20	Art. 129(5)
3	23	50	Art. 129(5)
3	24	50	Art. 129(5)
3	25	50	Art. 129(5)
3	26	100	Art. 129(5)
3	87	100	Art. 121(2)
14	88	150	Art. 128(1)
2	87	100	Art. 127(1)(b)
2	88	150	Art. 127(1)(a)
1	87	100	Art. 133(2)
1	90	1250	Art. 89(3)
1	92	250	Art. 48(4)
1	93	370	Art. 471
15	1	20	Art. 251: Table 1
15	2	50	Art. 251: Table 1
15	3	100	Art. 251: Table 1
15	4	350	Art. 251: Table 1
15	5	1250	Art. 251: Table 1
15	6	1250	Art. 251: Table 1
15	11	20	Art. 251: Table 1
15	12	50	Art. 251: Table 1
15	13	100	Art. 251: Table 1
15	14	1250	Art. 251: Table 1
15	15	1250	Art. 251: Table 1
15	16	1250	Art. 251: Table 1
15	21	40	Art. 251: Table 1
15	22	100	Art. 251: Table 1
15	23	225	Art. 251: Table 1
15	24	650	Art. 251: Table 1
15	25	1250	Art. 251: Table 1
15	26	1250	Art. 251: Table 1
15	31	40	Art. 251: Table 1
15	32	100	Art. 251: Table 1
15	33	225	Art. 251: Table 1
15	34	1250	Art. 251: Table 1
15	35	1250	Art. 251: Table 1
15	36	1250	Art. 251: Table 1
15	90	1250	Art. 251
16	87	100	

6 The enriched input layer

The following picture shows the ERM for the enriched input layer, reached after the preparation and enrichment phases.



The enriched input layer ERM is a simplified version of the input layer ERM, obtained after the application of transformation rules, so no additional instructions are required.

7 The output layer

In the present version of the BIRD, the output layer comprises AnaCredit and SHS cubes. Currently they describe how the data will be collected by the European Central Bank from National Central Banks. As NCBs, in turn, may collect the required information from banks in different ways, this definition of the output layer may not correspond to what the banks will actually send to their national authority.

However, in order to define common transformation rules, the BIRD assumes that the output of its process is common to all banks; its definition is based on the AnaCredit and SHS requirements at European level. Of course, the direct use of BIRD transformation rules, as metadata, by reporting banks may need some national adaptations.